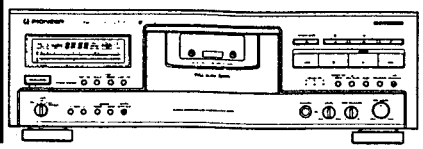
PIONEER®
*The Art of Entertainment*

# Service Manual



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**RRV1130**

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## STEREO CASSETTE DECK

# CT-S830S
# CT-S830S-G

## THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

| Type | Model | | Power Requirement | The voltage can be converted by the following method. |
|---|---|---|---|---|
| | CT-S830S | CT-S830S-G | | |
| HEM | ○ | ○ | AC220 – 230V | AC230 – 240V, * |

*: Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

## CONTENTS


CHAPTER1

1.1 SPECIFICATIONS ····· 1-2
1.2 PANEL FACILITIES ····· 1-3
1.3 FL INFORMATION ····· 1-4
1.4 ADJUSTMENTS ····· 1-5
1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING ····· 1-9
1.6 PCB PARTS LIST ····· 1-12

CHAPTER2

2.1 BLOCK DIAGRAM ····· 2-2
2.2 EXPLODED VIEWS AND PACKING ····· 2-3
2.3 SCHEMATIC DIAGRAMS ····· 2-9
2.4 PCB CONNECTION DIAGRAM ····· 2-15



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# CHAPTER 1

## 1.1 SPECIFICATIONS

System ..... 4 track, 2 channel stereo
Heads
Recording/Playback head:
Combined Hard permalloy recording/Hard permalloy playback head x 1
Erasing head: Ferrite head x 1
Motor ..... DC servo capstan motor x 1
DC reel motor x 1
DC assist motor x 1
Wow and Flutter ..... 0.023% (WRMS)
±0.056% (DIN)
Fast Winding Time ..... Approximately 80 seconds (C-60 tape)
Frequency Response
–20 dB recording:
TYPE IV (Metal) tape ..... 15 to 25,000 Hz (±6 dB)
TYPE II (High/$CrO_2$) tape ..... 15 to 20,000 Hz (±6 dB)
TYPE I (Normal) tape ..... 15 to 20,000 Hz (±6 dB)
Signal-to-Noise Ratio (Dolby NR off) ..... More than 60 dB
Noise Reduction Effect
Dolby B-type NR ON ..... More than 10 dB (at 5 kHz)
Dolby C-type NR ON ..... More than 19 dB (at 5 kHz)
Dolby S-type NR ON
(CT-S830S) ..... More than 22 dB (at 5 kHz)
Harmonic Distortion ..... No more than 0.6% (at –4 dB: 160 nwb/m)
Input (Sensitivity)
LINE (INPUT) ..... 100 mV (Input impedance 23 kΩ)
Output (Reference level)
LINE (OUTPUT) ..... 0.5 V (Output impedance 2.2 kΩ)
Headphone ..... 9 mW (Load impedance 32 Ω, LEVEL control max.)

### Subfunctions

- SUPER AUTO BLE system
- BIAS control
- Dolby HX Pro Headroom Extension system
- Dolby S-type noise reduction system (CT-S830S)
- Dolby B-type and C-type noise reduction systems
- MPX filter
- Level meter with 2 modes peak hold selection (12+1 segments)
- Level meter range selection (wide/expanded)
- 4-digit electronic tape counter with mode selection (Normal/Time/Remain)
- Auto monitor selection (Tape/Source)
- Display off
- Music search (over ±15 selections)
- Automatic Tape Loose Canceller (ATLC)
- Tape return/return play
- Auto space recording mute
- Auto tape selector
- Playback/recording timer start function
- CD•DECK SYNCHRO recording
- Headphones jack with level control
- Power eject (Open/Close)
- Repeat playback
- System remote control available
- Last memory

### Miscellaneous

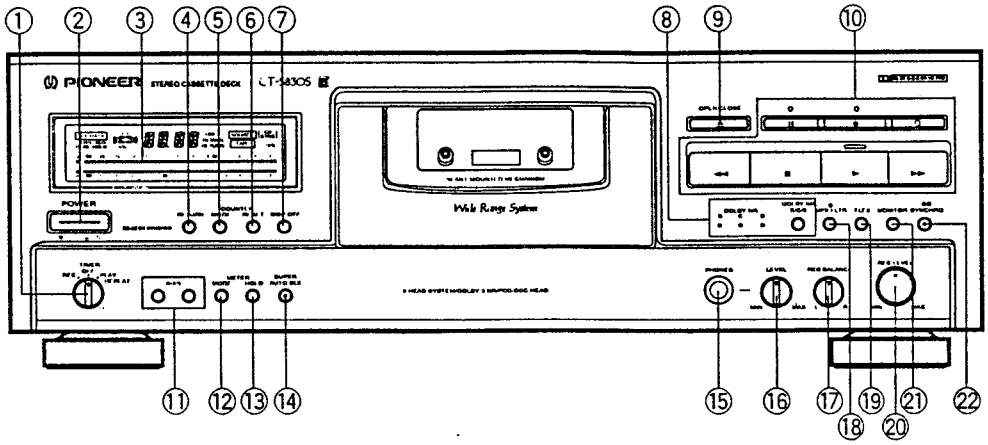
Power Requirements
European model ..... AC 220 — 230 Volts~, 50/60 Hz
Multivoltage model ..... AC 110/120 — 127/220/240 V (switchable), 50/60 Hz
Power consumption
CT-S830S ..... 28 W
CT-S730 ..... 27 W
Dimensions ..... 420 (W) x 140 (H) x 381 (D) mm
Weight (without package) ..... 7.1 kg

### Accessories

Operating instructions ..... 1
Connection cord with pin plugs ..... 2
CD•DECK SYNCHRO control cord ..... 1
Remote control cord ..... 1

***NOTE:***
*Specifications and design subject to possible modifications without notice, due to improvements.*

# 1.2 PANEL FACILITIES




This illustration shows model CT-S830S.

① **TIMER mode/repeat play switch (TIMER REC/OFF/PLAY-REPEAT)**
REC: Set to this position to perform timer recording.
OFF: Set to this position under ordinary conditions (when not using the timer or repeat functions).
PLAY-REPEAT:
Set to this position to perform timer playback. When the switch is set to this position during normal playback, repeat playback of a single tape can be performed.

② **Power switch (POWER ▮ OFF/ ⎓ ON)**
After pressing the switch, the WAIT message will appear in the counter display and the level meter scale will flash for about four seconds (the time necessary for circuitry to stabilize). When the display is flashing, no operating buttons will respond, with the exception of the cassette door OPEN/CLOSE button ( ⏏ ). To close the cassette door, do it while the power is turned on.

③ **Function display**

④ **Return button (RETURN)**
This button is used in the normal tape counter mode to fast forward or rewind the tape to a point near the counter reading "0000".

⑤ **Counter mode button (COUNTER MODE)**
Each time this button is pressed, one of the three modes (Normal tape counter/Timer counter/Remaining time counter) is set in sequence.

⑥ **Counter reset button (COUNTER RESET)**
Reset the counter indication to "0000" in the normal tape counter or the time counter mode.
To indicate the correct time value in the remaining time counter mode, this button must be set in accordance with the tape used.

⑦ **Display off button (DISP OFF)**
Press this button to turn off the function display.

⑧ **DOLBY* NR button/indicators (OFF/B/C/S) (CT-S830S)**
**DOLBY* NR button/indicators (OFF/B/C) (CT-S730)**
Press to select the Dolby NR system in the following order. The selected indicator lights up.

For the CT-S830S: OFF → B → C → S →
For the CT-S730: OFF → B → C →

When the DOLBY NR button is set to OFF, the DOLBY NR indicators go off.

*
- *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.*
- *"DOLBY", the double-D symbol ⧈ and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.*

⑨ **OPEN/CLOSE button ( ⏏ )**
Press this button to open or close the cassette door. Whenever inserting or removing a cassette tape, be sure that the power is turned on.

⑩ **Operation buttons**
- ▮▮ : Pause
- ● : Recording
- ○ : Recording mute
- ◄◄ : Rewind/music search
- ■ : Stop
- ► : Playback
- ►► : Fast forward/music search

⑪ **Recording bias buttons (BIAS –/+)**
When desired, these buttons can be used to manually adjust the recording bias after performing SUPER AUTO BLE tuning.
– : Changes tone by reducing recording bias
+ : Changes tone by increasing recording bias

⑫ **Level meter mode selector button (METER MODE)**
Switches between wide range, expanded range, and bias display.

⑬ **Level meter hold button (METER HOLD)**
Selects the display mode of the peak level.
Press this button so that the PEAK HOLD indicator lights up. The level meter holds the maximum level indications of the signal. To erase the maximum level indications, press this button again. When the PEAK HOLD indicator goes off, the level meter holds peak indications for about 1.2 second.

⑭ **SUPER AUTO BLE button**

⑮ **Headphones jack (PHONES)**

⑯ **Headphones level control (LEVEL)**

⑰ **Recording balance control (REC BALANCE)**

⑱ **MPX Filter button (MPX FLTR)**
The indicator lights when the MPX Filter button is set to ON.

⑲ **FLEX button**

⑳ **Recording level control (REC LEVEL)**

㉑ **Monitor selector button (MONITOR)**
Used to monitor the source sound or adjust recorded sound during recording.
- When the unit is set to record or playback mode, the TAPE indicator lights up and monitor mode is automatically selected.

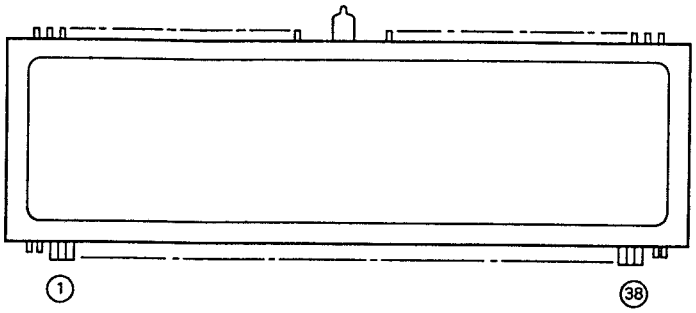
㉒ **CD•DECK SYNCHRO recording button (CD SYNCHRO)**

## ATLC (Automatic Tape Loose Canceler)

With the tape slack prevention function, when the cassette door closes, the reel automatically revolves to eliminate any tape slack.

# 1.3 FL INFORMATION

## RAW1128 (V1501)

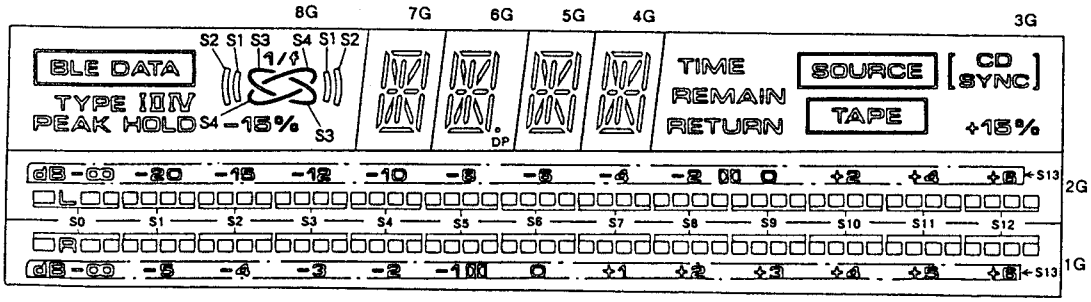


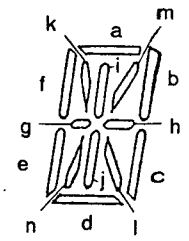

### Pin Connection

| TERMINAL NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELECTRODE | F1 | F1 | NP | NP | NC | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G | P14 | P13 | P12 | P11 | P10 | P9 | |
| TERMINAL NO. | | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| ELECTRODE | | P8 | P7 | P6 | P5 | P4 | P3 | P2 | P1 | P0 | NP | NP | NP | NP | NP | NP | NP | NP | F2 | F2 |

Notes F : Filament G : Grid P : Anode NP : No pin

### Grid Assignment




### Anode Connection

| | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---|---|---|---|---|---|---|---|
| S0 | 1/f | a | a | a | a | TIME | S0 | S0 |
| S1 | ( ) S1 | b | b | b | b | REMAIN | S1 | S1 |
| S2 | ( ) S2 | c | c | c | c | RETURN | S2 | S2 |
| S3 | S3 | d | d | d | d | TAPE | S3 | S3 |
| S4 | S4 | e | e | e | e | SOURCE | S4 | S4 |
| S5 | – | f | f | f | f | CD SYNC | S5 | S5 |
| S6 | BLE DATA | g | g | g | g | +15% | S6 | S6 |
| S7 | TYPE | h | h | h | h | – | S7 | S7 |
| S8 | I | i | i | i | i | – | S8 | S8 |
| S9 | II | j | j | j | j | – | S9 | S9 |
| S10 | IV | k | k | k | k | – | S10 | S10 |
| S11 | -15% | l | l | l | l | – | S11 | S11 |
| S12 | HOLD | m | m | m | m | – | S12 | S12 |
| S13 | PEAK | n | DP | n | n | – | S13 | S13 |
| S14 | – | – | n | – | – | – | – | – |

# 1.4 ADJUSTMENTS

## 1. MECHANICAL ADJUSTMENT

| 1. Tape Speed Adjustment | | | |
|---|---|---|---|
| Mode | Test tape | Adjustment position | Specification rating (playback frequency) |
| PLAY | Play the STD–301 tape (3kHz) | Tape speed adjustment hole | 3000Hz ± 5Hz |

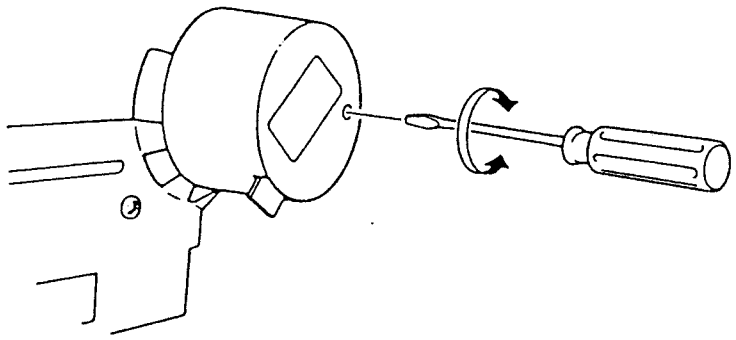


Fig. 1 Tape speed adjustment

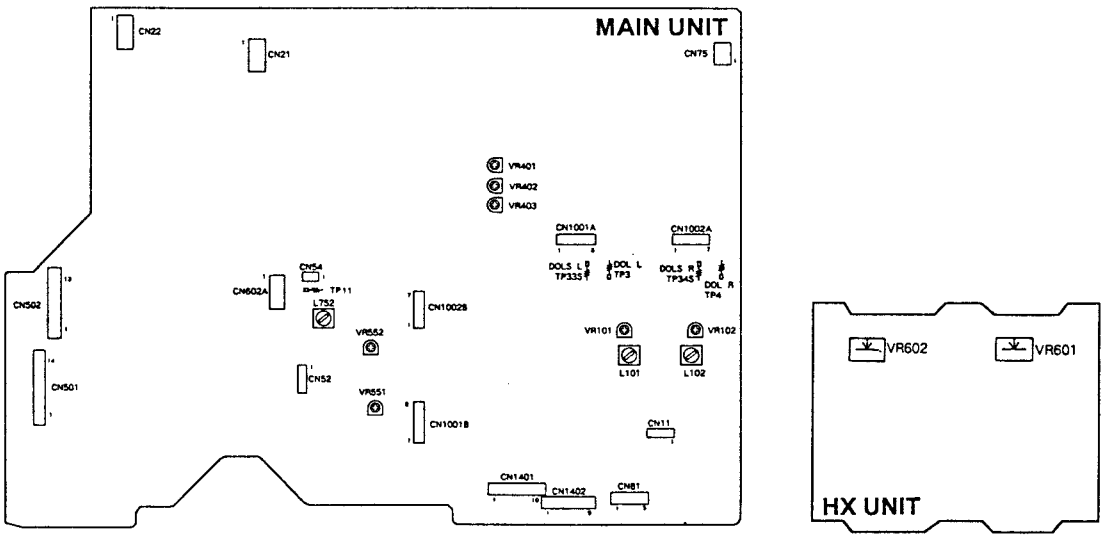



Fig. 2 Adjusting points

## 2. ELECTRICAL ADJUSTMENTS

### Adjustment Conditions

1. The mechanical adjustments must be completed first.
2. The head must be cleaned and demagnetized.
3. Turn power on allow the deck to warm up for at least a few minutes before commencing any electrical adjustments.
4. The reference signal is 0 dBV=1 Vrms.
5. Connect a 10 kΩ load resistance to the OUTPUT terminals.
6. Unless otherwise specified, the switches listed below are left in the positions indicated.
   DOLBY NR : OFF
   TAPE SELECTOR : NORM

### Test Tapes

STD–331E : Playback adjustments (See Fig. 3)
STD–631 : NORMAL blank tape
STD–621 : $CrO_2$ blank tape
STD–610 : METAL blank tape

* As the reference recording level is 250 nwb/m for STD–331E, the recording level will be higher by 4 dB for STD–331B (160 nwb/m). When adjusting, pay carefull attention to the type of tape used.

### List of Adjustments

#### Playback sections

1. Head azimuth adjustment.
2. Playback level adjustment.

#### Recording sections

1. Bias oscillator adjustment.
2. Bias trap adjustment.
3. Recording bias adjustment.
4. Recording level adjustment.
5. AUTO BLE adjustment.

NOTE: This unit has an automatic tape selection feature.

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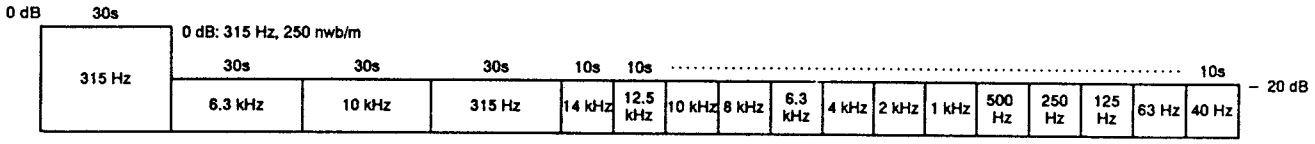


Fig. 3 Constants of the test tape STD–331E

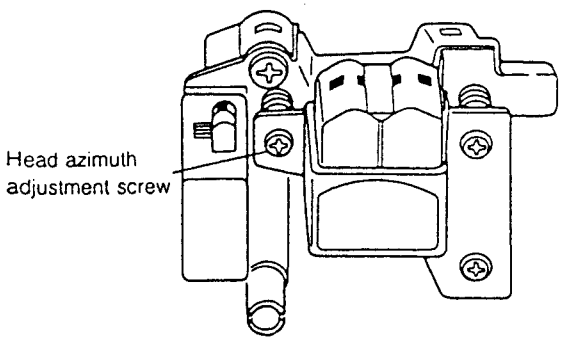


Fig. 4 Head azimuth adjustment

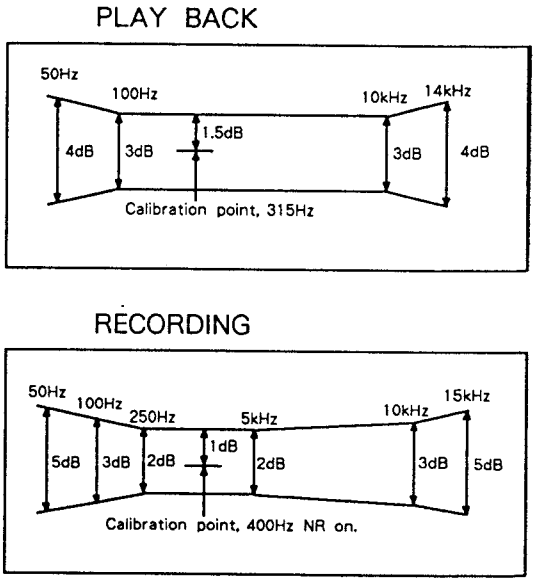


Fig. 5 Frequency response zone

# PLAYBACK SECTION

## 1. Head Azimuth Adjustment

- Turn VR101, 102 to mechanical center positions.

| No. | Mode | Input signal & test tape | Adjustment location | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|
| 1. | PLAY | Play the 10 kHz/–20 dB section of STD–331E test tape. | Head azimuth adjustment screw. (See Fig. 4) | LINE OUT | Maximum playback signal level. | |
| 2. | STOP | Lock the screw with screw lock after completing adjustment. | | | | |

Note: The left and right phase difference for the 12.5 kHz tone should be within 75 degrees. (That for the 10 kHz tone should be within 60 degrees.)

## 2. Playback Level Adjustment

- This adjustment determines the DOLBY NR level, and must be performed with great care.

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | PLAY | Play the 315 Hz/0 dB section of the STD–331E test tape. | Deck | VR101 (Lch)<br>VR102 (Rch) | TP. 3 (Lch)<br>TP. 4 (Rch) | – 7.2 dBV | |
| 2. | Set the DOLBY NR switch to the S position. | | | | | | |
| 3. | PLAY | Play the 315 Hz/0 dB section of the STD–331E test tape. | | | TP. 33S (Lch)<br>TP. 34S (Rch) | –7.2 dBV ± 0.5 dB | |

# RECORDING SECTION

## 1. Bias Oscillator Adjustment

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC/<br>PLAY | Load the STD–610 test tape with no input signal. | Deck | L752 | TP. 11 | 105 kHz ± 300 Hz | |

## 2. Bias Trap Adjustment

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC/<br>PLAY | Load the STD–610 test tape with no input signal. | Deck | L101 (Lch)<br>L102 (Rch) | LINE OUT | Minimum output | |

## 3. Recording Bias Adjustment

- After the adjustment, Caution should be exercised so as not to become under bias by checking the distortion rate.
- Set the DOLBY NR switch to the OFF position.

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC/<br>PLAY | Record the 315 Hz and 10kHz signals at – 26 dBV input level onto the STD – 631 test tape, and Playback. | Deck | VR601 (Lch)<br>VR602 (Rch) | LINE OUT | Repeatedly record, playback and adjust so that the playback level of 10 kHz signal becomes 0 dB ± 0.5dB when compared with the 315Hz signal. | |

## 4. Recording Level Adjustment

- Set the DOLBY NR switch to the OFF position.

| No. | Mode | Input signal & test tape | Adjustment location | | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | REC PAUSE | Apply a 315 Hz/ – 4 dBV signal to the line input terminals, load the STD–631 test tape. | REC level control volume | | TP. 1 (Lch) TP. 2 (Rch) | –11.2 dBV | |
| 2. | REC/ PLAY | Record the above signal onto the STD – 631 test tape, and playback. | Deck | VR551 (Lch) VR552 (Rch) | TP. 3 (Lch) TP. 4 (Rch) | Repeatedly record, playback and adjust so that the playback signal level becomes –11.2 dB. | |
| 3. | REC/ PLAY | Record the above signal onto the STD – 621 test tape, and playback. | Check | | | –11.2 dBV ± 1 dB | |
| 4. | REC/ PLAY | Record the above signal onto the STD – 610 test tape, and playback. | Check | | | –11.2 dBV ± 1 dB | |
| 5. | STOP | Set the DOLBY NR switch to the S position. | | | | | |
| 6. | REC/ PLAY | Record the above signal onto the STD – 631 test tape, and playback. | Check | | LINE OUT | 0 dB ± 1.0 dB for paragraph 2.(*1) | |

*1: If this confirmation value cannot be obtained, perform "Playback Level Adjustment" once again.

## 5. AUTO BLE Adjustment

- BLE Adjustment must be performed after all other adjustments are completed.
- This adjustment should be performed in the test mode.
- Entering the test mode
  Press the COUNTER MODE, COUNTER RESET and PAUSE keys on the front panel simultaneously, with the power ON. The unit enters the test mode and oscillates a 400 Hz signal.
  Thereafter, each time the AUTO BLE key is pressed, the oscillation frequency changes as follows: 3 kHz oscillation → 15 kHz oscillation → 400Hz oscillation

| No. | Mode | Input signal & test tape | Adjustment location | Measuring location | Adjustment value | Remarks |
|---|---|---|---|---|---|---|
| 1. | – | Set to test mode | – | – | | |
| 2. | | Press the AUTO BLE key on the front panel. | VR401 | Level meter Lch | Adjust the Lch segment which is lit until Rch is not lighting up.<br>Lch ■→□<br>Rch ■■□■■<br>(■: light up □: not light up) | 400 Hz adjustment (FL indication 1) |
| 3. | | Press the AUTO BLE key on the front panel. | VR402 | | | 3 kHz adjustment (FL indication 2) |
| 4. | | Press the AUTO BLE key on the front panel. | VR403 | | | 15 kHz adjustment (FL indication 3) |
| 5. | When the COUNTER RESET key is pressed again, the test mode is released. | | | | | |

# 1.5 PARTS LIST FOR EXPLODED VIEWS AND PACKING

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## 1. EXTERIOR

### ■ CONTRAST OF CT-S830S/HEM AND CT-S830S-G/HEM

CT-S830S/HEM and CT-S830-G/HEM have the same construction except for the following:

| Mark | No. | Symbol & Description | Part No. | | Remarks |
|---|---|---|---|---|---|
| | | | CT-S830S/HEM | CT-S830S-G/HEM | |
| | 16 | Panel stay | RNT1197 | RNT1196 | |
| | 19 | Operation button | RAC1900 | RAC1897 | |
| | 20 | VR knob | RAC1902 | RAC1899 | |
| | 21 | Rotary knob | RAC1903 | RAC1895 | |
| | 22 | Power button | RAC1904 | RAC1894 | |
| | 24 | Lower panel | RAH2406 | RAH2404 | |
| | 27 | Front panel | RAH2409 | RAH2403 | |
| | 29 | Bonnet assy | REA1131 | REA1132 | |
| | 30 | Rear panel | RNA1810 | RNA1805 | |
| | 31 | Door | RNK2063 | RNK2061 | |
| | 32 | Escutcheon mold | RNK2065 | RNK2062 | |
| | 36 | Lower mold | RNK2081 | RNK2080 | |
| | 37 | Name plate | VAM1032 | RAN1011 | |

### ■ PARTS LIST FOR CT-S830S/HEM

| Mark | No. | Description | Part No. |
|---|---|---|---|
| ⚠ | 1 | Strain relief | CM – 22B |
| ⚠ | 2 | AC power cord | PDG1003 |
| ⚠ | 3 | Fuse (T1.6A) | REK – 102 |
| ⚠ | 4 | Power transformer | RTT1233 |
| | 5 | Mechanism unit | RYM1232 |
| NSP | 6 | Cord stopper | DNF1128 |
| | 7 | Door spring | RBH1395 |
| NSP | 8 | Rubber spacer (A) | REB1057 |
| | 9 | Door cushion | REB1174 |
| | 10 | Protector | RED1020 |
| NSP | 11 | Main chassis | RNB1059 |
| NSP | 12 | PCB base | RNE1221 |
| | 13 | VR shield plate | RNE1773 |
| | 14 | HP holder | RNE1776 |
| | 15 | Cord clamper | RNH – 184 |
| | 16 | Panel stay | RNT1197 |
| | 17 | Snap plate | VNE1102 |
| | 18 | Insulator | PNW1912 |
| | 19 | Operation button | RAC1900 |
| | 20 | VR knob | RAC1902 |
| | 21 | Rotary knob | RAC1903 |
| | 22 | Power button | RAC1904 |
| | 23 | FL filter | RAH1936 |
| | 24 | Lower panel | RAH2406 |
| | 25 | FL lens | RAH2407 |
| | 26 | Door lens | RAH2408 |
| | 27 | Front panel | RAH2409 |
| | 28 | Door sheet | REB1191 |
| | 29 | Bonnet assy | REA1131 |
| | 30 | Rear panel | RNA1810 |
| | 31 | Door | RNK2063 |
| | 32 | Escutcheon mold | RNK2065 |
| | 33 | LED lens 1 | RNK2066 |
| | 34 | Lens L | RNK2067 |
| | 35 | Spacer | REC1197 |
| | 36 | Lower mold | RNK2081 |
| | 37 | Name plate | VAM1032 |
| | 38 | Screw | BBT30P100FZK |
| | 39 | Screw | BBZ26P080FZK |
| | 40 | Screw | BBZ30P060FCC |
| | 41 | Screw | FBT40P080FZK |
| | 42 | Screw | IBZ30P060FCC |
| | 43 | Screw | IBZ30P060FCC |
| | 44 | Screw | IBZ30P080FCC |
| | 45 | Screw | IBZ30P100FCC |
| | 46 | Screw | IBZ40P080FCC |
| NSP | 47 | Binder | Z09 – 058 |
| NSP | 48 | HPHN unit | RWZ3232 |
| | 49 | FL unit | RWZ3234 |
| | 50 | OPSW unit | RWZ3236 |
| NSP | 51 | VR unit | RWZ3270 |
| | 52 | MAIN unit | RWZ3272 |
| | 53 | HX unit | RWX1069 |
| | 54 | 1/F unit | RWX1086 |
| | 55 | Dolby S unit | RWX1103 |
| NSP | 56 | PWSW unit | RWZ3275 |
| NSP | 57 | TRN 2 unit | RWZ3279 |
| NSP | 58 | TRN 1 PCB | RNZ2452 |
| NSP | 59 | UL tube | Z09 – 019 |

## 2. MECHANISM UNIT

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Rotary encoder | RSX1004 |
| | 2 | Capstan motor assembly | RXX1491 |
| | 3 | Reel motor assembly | REA1075 |
| | 4 | Step screw | RBA – 064 |
| | 5 | Cassette plate assembly | RXX1064 |
| | 6 | Rubber cushion | REB1125 |
| | 7 | Pinch spring | RBL – 028 |
| | 8 | Pinch thrust spring | RBL – 030 |
| | 9 | Sub – pinch spring | RBL – 098 |
| | 10 | Capstan belt | REB1143 |
| | 11 | Capstan belt (A) | REB – 509 |
| | 12 | Tape guide | RNK1823 |
| | 13 | Flywheel assembly | RXA1374 |
| | 14 | Sub – flywheel assembly | RXA1375 |
| | 15 | Metal holder assembly (A) | RXA1426 |
| | 16 | Metal holder assembly (B) | RXA1343 |
| | 17 | Pinch roller arm (R) assembly | RXB – 876 |
| | 18 | Pinch roller arm (A) assembly | RXB – 877 |
| | 19 | BT spring (A) | RBL – 031 |
| | 20 | BT spring (B) | RBL – 032 |
| | 21 | Idler pressure spring | RBL – 033 |
| | 22 | Reel shaft cap (B) | RNK – 815 |
| | 23 | BT disk assembly | RXB – 751 |
| | 24 | Reel base assembly | RXB – 874 |
| | 25 | Take – up idler assembly | RXA1554 |
| | 26 | Washer | RBF – 065 |
| | 27 | Head base spring | RBL – 037 |
| | 28 | Brake spring | RBL – 038 |
| | 29 | Drive belt | REB1182 |
| | 30 | Brake shoe | REB – 511 |
| | 31 | Brake | RNL – 723 |
| | 32 | Cam gear | RNK1640 |
| | 33 | Side cam gear | RNK1765 |
| | 34 | Stabilizer | REB1161 |
| | 35 | Eject spring | RBL – 039 |
| | 36 | Half set arm spring | RBL – 040 |
| | 37 | REC functioning spring | RBL – 041 |
| | 38 | Detection functioning spring | RBL – 042 |
| | 39 | Reel motor mounting plate | RNE1604 |
| | 40 | Flywheel holder | RNH – 304 |
| | 41 | Cord clamper | RNH – 184 |
| | 42 | Washer | RBF – 057 |
| | 43 | REC detector arm | RNL – 733 |
| | 44 | Chrom detector arm | RNL – 734 |
| | 45 | Metal detector arm | RNL – 735 |
| | 46 | Thrust holder | RNL – 743 |
| | 47 | Motor pulley | PNW1634 |
| | 48 | Pressure arm (R) | RNL – 725 |
| | 49 | Collar | RNL – 742 |
| | 50 | Pressure arm (L) | RNL – 726 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 51 | Head base set spring | RBL – 026 |
| | 52 | Gear chassis assembly | RXA1171 |
| | 53 | Screw | BBZ26P080FZK |
| | 54 | Pinch base assembly | RXB – 878 |
| | 55 | Screw | BBZ30P080FZK |
| | 56 | Eject lever | RNK1763 |
| | 57 | Screw | BCZ30P060FMC |
| | 58 | Screw | BMZ26P030FZK |
| | 59 | Screw | IBZ20P060FMC |
| | 60 | Screw | BMZ26P060FZK |
| | 61 | Screw | BMZ30P080FZK |
| | 62 | Screw | PMZ30P040FMC |
| | 63 | Screw | PMA26P050FZK |
| | 64 | Screw | PMA26P060FZK |
| | 65 | Screw | PMZ20P080FZK |
| | 66 | Washer | RBF – 030 |
| | 67 | Stabilizer (B) | REB1038 |
| | 68 | Earth spring | RBL – 059 |
| | 69 | Washer | RBF – 076 |
| | 70 | Washer | RBF1040 |
| | 71 | Binder | REC – 371 |
| | 72 | Steel ball (3mm) | REF – 022 |
| | 73 | Steel ball (4mm) | REF – 023 |
| | 74 | Screw | VCT30P060FZK |
| | 75 | LED (D3) | SLF – 401C |
| | 76 | Washer | WA21D040DO13 |
| | 77 | Washer | WA26N070W040 |
| | 78 | Washer | WA32D080DO50 |
| | 79 | E ring | YE20FUC |
| | 80 | E ring | YE25FUC |
| | 81 | E ring | YE30FUC |
| | 82 | Snap ring | YS24FBT |
| | 83 | Shift shaft assembly | RXB – 885 |
| | 84 | Head base assembly | RXX1333 |
| | 85 | Mechanism chassis assembly | RXA1366 |
| | 86 | Brake lever | RNK1638 |
| | 87 | Second pulley assembly | RXA1350 |
| | 88 | Door frame (L) | RNE1774 |
| | 89 | Pinch lever assembly | RXA1360 |
| | 90 | Door frame (R) | RNE1775 |
| | 91 | Damper assembly | VXA1153 |
| | 92 | Half pressure spring | RBK1004 |
| | 93 | Door pocket | RNK1764 |
| | 94 | Loading motor | VXM1034 |
| | 95 | Screw | PBZ20P060FMC |
| | 96 | Capstan motor | RXM1054 |
| | 97 | Reel motor | RXM1065 |
| | 98 | 2.5mm pitch side post (5P) | BS5P – SHF – 1 |
| | 99 | Connector assembly (4P) | RKP1383 |
| | 100 | Connector assembly (2P) | RKP1384 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| NSP | 101 | Gear base assembly | RXB – 882 |
| NSP | 102 | E head | RPB1042 |
| NSP | 103 | R & P head | RPB1041 |
| NSP | 104 | Connector unit | RWZ1751 |
| NSP | 105 | Adjustment nut | RBA1047 |
| NSP | 106 | Head adjustment spring C | RBL – 034 |
| NSP | 107 | Hight spring | RBL – 036 |
| NSP | 108 | Head base | RNK1645 |
| NSP | 109 | Sub – head base | RNG – 335 |
| NSP | 110 | E head base | RNG1033 |
| NSP | 111 | Earth lead assembly | RDF – 001 |
| NSP | 112 | REC switch unit | RWZ1749 |
| NSP | 113 | Tape selector unit | RWZ1750 |
| NSP | 114 | Sensor unit (B) | RWZ1753 |
| NSP | 115 | Cassette plate | RAH1306 |
| NSP | 116 | Lead wire holder | RNL – 793 |
| NSP | 117 | Shift roller | RNL – 731 |
| NSP | 118 | Sensor unit (A) | RWZ1752 |
| NSP | 119 | Motor pulley | RNK1676 |
| NSP | 120 | Reel motor pulley | RLA1186 |
| NSP | 121 | Connector assembly (4P) | RKP1111 |
| NSP | 122 | Connector assembly (2P) | RKP – 895 |
| NSP | 123 | Friction spring | RBL – 047 |
| NSP | 124 | Spring cup | RNL – 012 |
| NSP | 125 | Idle pulley | RNL – 549 |
| NSP | 126 | Idler arm | RNK1908 |
| | 127 | Spacer | REF1004 |

## 3. PACKING

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Pad (F) | RHA1145 |
| | 2 | Pad (R) | RHA1146 |
| | 3 | Packing case (CT-S830S/HEM) | RHG1555 |
| | 3 | Packing case (CT-S830S-G/HEM) | RHG1559 |
| | 4 | Sheet | RHX1007 |
| | 5 | Control cord (For CD • DECK SYNCHRO) | RDE1038 |
| | 6 | Operating instructions (English/Spanish) | RRE1094 |
| | 7 | Connection cord (For SR cord) | PDE1247 |
| | 8 | Connection cord assembly | RDE1036 |
| | 9 | Operating instructions (French/German/Italian/ Dutch/Swedish/Portuguese) | RRD1146 |
| | 10 | Vinyl bag | Z21 – 038 |

# 1.6. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × $10^1$ → 561 ····· RD1/8PM 5 6 1 J
47k Ω → 47 × $10^3$ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × $10^1$ → 5621 ····· RN1/4PC 5 6 2 1 F

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | **LIST OF ASSEMBLIES** | | |
| NSP | MOTHER UNIT | | RWM1716 |
| | ├MAIN UNIT | | RWZ3272 |
| | │ ├HX UNIT | | RWX1069 |
| | │ ├1/F UNIT | | RWX1086 |
| | │ └DOLBY S UNIT | | RWX1103 |
| NSP | ├PWSW UNIT | | RWZ3275 |
| NSP | ├TRN 2 UNIT | | RWZ3279 |
| NSP | └TRN 1 PCB | | RNZ2452 |
| NSP | SUB UNIT | | RWM1701 |
| NSP | ├HPHN UNIT | | RWZ3232 |
| | ├FL UNIT | | RWZ3234 |
| | ├OPSW UNIT | | RWZ3236 |
| NSP | └VR UNIT | | RWZ3270 |
| | JUNCTION CIRCUIT UNIT | | RWM1615 |
| NSP | ├REC SWITCH UNIT | | RWZ1749 |
| NSP | ├TAPE SELECTOR UNIT | | RWZ1750 |
| NSP | ├CONNECTOR UNIT | | RWZ1751 |
| NSP | ├SENSOR UNIT(A) | | RWZ1752 |
| NSP | └SENSOR UNIT(B) | | RWZ1753 |
| | **MAIN UNIT** | | |
| | **SEMICONDUCTORS** | | |
| | IC521 | | BA10339 |
| | IC401, IC501 | | BA15218N |
| | IC871 | | BA6109 |
| | IC551 | | CXA1198AP |
| | IC121, IC321 | | CXA1330S |
| ⚠ | IC901, IC902 | | ICP-N20 |
| | IC702 | | LC7570 |
| | IC141, IC903 | | M5218AP |
| | IC101 | | M5220P |
| ⚠ | IC812 | | NJM7805FA |
| ⚠ | IC811 | | NJM7812FA |
| | IC703 | | NM93C46N |
| | IC701 | | PD4444A |
| | IC851 | | TA7291P |
| | IC543 | | TC4050BP |
| | IC251 | | TC4052BP |
| | IC151, IC351 | | TC4066BP |
| ⚠ | Q801 | | 2SA1283 |
| | Q701, Q871-Q874, Q902 | | 2SA1309A |
| ⚠ | Q904 | | 2SB1185 |
| | Q751, Q752 | | 2SC3243 |
| | Q621, Q630, Q831-Q833, Q901 | | 2SC3311A |
| ⚠ | Q903 | | 2SD1762 |
| | Q251, Q252, Q305, Q306 | | 2SD2144S |
| | Q551, Q552, Q557, Q558, Q753 | | 2SD2144S |
| | Q304 | | 2SK246 |
| | Q142, Q163, Q302, Q771, Q835 | | DTA124ES |
| | Q952, Q971-Q974 | | DTA124TS |
| | Q101, Q102, Q875 | | DTC114ES |
| | Q851, Q852 | | DTC114TS |
| | Q141, Q161, Q162, Q301 | | DTC124ES |
| | Q401, Q402, Q461-Q476 | | DTC124ES |
| | Q501, Q502, Q521, Q522 | | DTC124ES |
| | Q553-Q555, Q624-Q629 | | DTC124ES |
| | Q735-Q738, Q834, Q951 | | DTC124ES |
| | Q622, Q623 | | DTC124TS |
| ⚠ | D901-D904 | | 10DF2FA9 |
| ⚠ | D801, D811, D871 | | 1SR35-100AVL |
| | D813, D814 | | 1SS252 |
| | D101-D104, D141, D301, D302 | | 1SS254 |
| | D501-D506, D701, D703-D713 | | 1SS254 |
| | D751, D831, D832, D951-D960 | | 1SS254 |
| | D971-D976 | | 1SS254 |
| ⚠ | D905, D906 | | HZS6C1L |
| | D833 | | MTZ3. 6B |
| ⚠ | D803 | | MTZJ33B |
| | D702 | | MTZJ9. 1A/B |
| ⚠ | D802 | | MTZJ9. 1C |
| ⚠ | D812 | | S2VB20 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **COILS AND FILTERS** | | | |
| | L751 | | LFA121K |
| | L752 | | RTD1057 |
| | L101, L102 | | RTF1060 |
| | L851 | | RTF1068 |
| | L551, L552 | | RTF1094 |
| | F301, F302 | | RTF1210 |
| **CAPACITORS** | | | |
| | C871 | | CEANP4R7M35 |
| | C251, C401, C551, C552, C564 | | CEAS010M50 |
| | C954 | | CEAS010M50 |
| | C4, C503, C504, C771, C852 | | CEAS100M50 |
| | C751, C815, C875 | | CEAS101M16 |
| | C802, C804 | | CEAS101M50 |
| | C817 | | CEAS102M6R3 |
| | C509, C756, C874 | | CEAS330M16 |
| | C702, C721, C833 | | CEAS470M16 |
| | C129, C130, C317, C318, C872 | | CEASR22M50 |
| | C127, C128, C131, C132 | | CEASR33M50 |
| | C315, C316, C319, C320 | | CEASR33M50 |
| | C505, C506 | | CEASR47M50 |
| | C133, C134, C252, C253 | | CENA101M25 |
| | C323, C324 | | CENA101M25 |
| | C113, C114, C147-C150 | | CENA470M25 |
| | C559, C560 | | CENA470M25 |
| | C305, C306 | | CEYA010M50 |
| | C141, C142, C145, C146 | | CEYA100M50 |
| | C353, C354, C907, C908 | | CEYA100M50 |
| | C107, C108, C135, C136 | | CEYA220M25 |
| | C555, C556 | | CEYA220M25 |
| | C137, C138, C321, C322 | | CEYA330M25 |
| | C121, C122, C309, C310 | | CEYA4R7M50 |
| | C553, C554, C831, C832 | | CEYA4R7M50 |
| | C123-C126, C311-C314 | | CFTXA222J50 |
| | C405, C753, C754 | | CFTXA332J50 |
| | C406, C755 | | CFTXA682J50 |
| | C752 | | CFTYA223J50 |
| | C109, C110, C402 | | CFTYA273J50 |
| | C501, C502 | | CFTYA473J50 |
| | C105, C106, C403, C909, C910 | | CFTYA563J50 |
| | C255-C257 | | CKCYB561K50 |
| | C541, C701, C703-C705, C722 | | CKCYF103Z50 |
| | C873, C951, C952 | | CKCYF103Z50 |
| | C254, C303, C801, C803 | | CKCYF473Z50 |
| | C811-C813, C851, C901, C902 | | CKCYF473Z50 |
| | C953 | | CKCYF473Z50 |
| | C103, C104, C507, C508 | | CKPUYB101K50 |
| | C111, C112, C557, C558 | | CKPUYB102K50 |
| | C143, C144 | | CKPUYB122K50 |
| | C407 | | CQMA103J50 |
| | C404 | | CQMA823J50 |
| | C757 | | CQPA752J100 |
| | C101, C102 | | CQSXA221J160 |
| | C814 (6800/25) | | RCH1033 |
| | C903, C904 (2200/25) | | RCH1096 |
| | C911, C912 (220/25) | | RCH1103 |
| | C816 (10000/16) | | VCH1054 |
| **RESISTORS** | | | |
| | R701, R702, R707 | | RA4T223J |
| | R545 | | RA5T223J |
| | R705, R706, R712 | | RA7T223J |
| | R369, R370 (560Ω) | | RCN1024 |
| | R153, R154, R157, R158 (12K) | | RCN1064 |
| | R546 (11K/22K) | | RCX1020 |
| | R608 | | RD1/2LMF010J |
| | R855 | | RD1/2LMF100J |
| | R802 | | RD1/2LMF562J |
| | R753, R754 | | RD1/2LMF6R2J |
| | R327, R328 | | RDR1/4PM103J |
| | R257, R258 | | RDR1/4PM471J |
| ⚠ | R801 | | RFA1/4L470J |
| | R871 | | RS1LMF010J |
| ⚠ | R903, R904 | | RS1LMF151J |
| | R803 | | RS1LMF152J |
| | VR551, VR552 (22K) | | RCP1046 |
| | VR101, VR102, VR401, VR403 (47K) | | RCP1047 |
| | VR402 (100K) | | RCP1048 |
| | Other Resistors | | RD1/6PM□□□J |
| **OTHERS** | | | |
| | CN75, CN76 JUMPER CONNECTOR 3P | | KPC3 |
| | CN21, CN22 JANPER CONNECTOR 5P | | KPC5 |
| | JA953 MINI JACK | | PKN1005 |
| | JA251, JA301 JACK 2P | | RKB1020 |
| | JA951, JA952 REMOTE CONTROL JACK | | RKN1004 |
| | CN81 JUMPER CONNECTOR 5P | | SBRK05S |
| | CN1402 JUMPER CONNECTOR 9P | | SBRK09S |
| | CN1401 JUMPER CONNECTOR 10P | | SBRK10S |
| | CN502 JUMPER CONNECTOR 13P | | SBRK13S |
| | CN501 JUMPER CONNECTOR 14P | | SBRK14S |
| | EARTH PLATE | | VNF-091 |
| | X701 CERAMIC RESONATOR (4.19MHz) | | VSS1014 |
| | CN54 SP CONNECTOR | | W-P5102#51 |
| | CN52 SP CONNECTOR | | W-P5104#52 |
| | CN11 SP CONNECTOR | | W-P5104#56 |

## HX UNIT

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | IC601 | | UPC1297CA |
| | Q602 | | 2SA1309A |
| | Q603 | | DTC124ES |
| | D602 | | 1SS254 |
| **COILS AND FILTERS** | | | |
| | L601, L602 (4.6MH) | | RTD1011 |
| **CAPACITORS** | | | |
| | C609, C610 | | CCCSL101K500 |
| | C616, C617 | | CEAS330M35 |
| | C614 | | CEASR10M50 |
| | C601, C602 | | CFTXA103J50 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | C605, C606 | | CFTXA223J50 |
| | C607, C608 | | CGCYX223K25 |
| | C613 | | CKPUYB101K50 |
| | C603, C604 | | CKPUYB821K50 |
| | C611, C612 | (390P/500) | RCG1004 |
| **RESISTORS** | | | |
| | VR601, VR602 | | VRTB6HS473 |
| | Other Resistors | | RD1/6PM□□□J |

## 1/F UNIT

| | | | |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | IC1111, IC1131 | | BA15218N |
| | Q1131-Q1136 | | DTC124ES |
| | D1111 | | 1SS254 |
| **CAPACITORS** | | | |
| | C1141-C1143 | | CEAS010M50 |
| | C1117, C1118 | | CEAS101M10 |
| | C1139, C1140 | | CEAS4R7M50 |
| | C1119 | | CEASR47M50 |
| | C1133, C1134 | | CGCYX152K25 |
| | C1135, C1136 | | CGCYX272K25 |
| | C1115, C1116 | | CGCYX332K25 |
| | C1120 | | CGCYX473K25 |
| | C1137, C1138 | | CGCYX562K25 |
| | C1111, C1112 | | CGCYX822K25 |
| | C1113 | | CKPUYB101K50 |
| **RESISTORS** | | | |
| | All Resistors | | RD1/6PM□□□J |

## DOLBY S UNIT

| | | | |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | IC1001, IC1002 | | CXA1417Q |
| | IC1003 | | M5218AFP |
| **CAPACITORS** | | | |
| | C1003, C1004, C1015, C1016 | | CEJA010M50 |
| | C1051, C1052 | | CEJA010M50 |
| | C1033, C1034 | | CEJAR10M50 |
| | C1001, C1002, C1031, C1032 | | CEJAR22M50 |
| | C1045, C1046, C1091, C1092 | | CEJAR22M50 |
| | C1027, C1028, C1041, C1042 | | CEJAR47M50 |
| | C1075, C1076 | | CEJAR47M50 |
| | C1019, C1020 | | CFTYA224J50 |
| | C1037, C1038 | | CFTYA334J50 |
| | C1013, C1014, C1055, C1056 | | CKSQYB102K50 |
| | C1007, C1008, C1025, C1026 | | CKSQYB104K25 |
| | C1043, C1044, C1067, C1068 | | CKSQYB104K25 |
| | C1077, C1078, C1081, C1082 | | CKSQYB104K25 |
| | C1087, C1088 | | CKSQYB104K25 |
| | C1023, C1024, C1049, C1050 | | CKSQYB153K50 |
| | C1065, C1066, C1069-C1072 | | CKSQYB182K50 |
| | C1083, C1084 | | CKSQYB182K50 |
| | C1079, C1080 | | CKSQYB183K50 |
| | C1059, C1060 | | CKSQYB222K50 |
| | C1009, C1010, C1073, C1074 | | CKSQYB223K50 |
| | C1093, C1094 | | CKSQYB333K50 |
| | C1005, C1006, C1061, C1062 | | CKSQYB393K50 |
| | C1063, C1064 | | CKSQYB471K50 |
| | C1047, C1048 | | CKSQYB473K50 |
| | C1011, C1012 | | CKSQYB681K50 |
| | C1017, C1018, C1053, C1054 | | CKSQYB822K50 |
| | C1021, C1022, C1039, C1040 | | CKSQYB823K25 |
| | C1089, C1090 | (10/25) | RCH1093 |
| | C1085, C1086 | (22/25) | RCH1094 |
| | C1029, C1030, C1035, C1036 | (47/16) | RCH1095 |
| **RESISTORS** | | | |
| | All Resistors | | RS1/10S□□□J |
| **OTHERS** | | | |
| | CN1002 | | 6034B-07Z001 |
| | CN1001 | | 6034B-08Z001 |

## PWSW UNIT

| | | | |
|---|---|---|---|
| **SWITCHES AND RELAYS** | | | |
| ⚠ | S991 | | RSA1001 |
| **CAPACITORS** | | | |
| ⚠ | C991 | | VCG-044 |
| **OTHERS** | | | |
| ⚠ | TERMINAL | | RKC-061 |

## TRN 2 UNIT

TRN 2 unit has no service part.

## TRN 1 PCB

TRN1 PCB has no service part.

## HPHN UNIT

| | | | |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | IC201 | | M5218AP |
| **CAPACITORS** | | | |
| | C201, C202 | | CEAS010M50 |
| | C203, C204 | | CEAS101M10 |
| **RESISTORS** | | | |
| | VR201 | (20KB) | PCS1002 |
| | Other Resistors | | RD1/6PM□□□J |
| **OTHERS** | | | |
| | JA201 | | RKN1002 |

## FL UNIT

| | | | |
|---|---|---|---|
| **SEMICONDUCTORS** | | | |
| | D1501-D1510, D1512, D1513 | | 1SS254 |
| **SWITCHES AND RELAYS** | | | |
| | S1511 | | RSB1011 |
| | S1501-S1509 | | RSG1039 |
| **OTHERS** | | | |
| | V1501 FL INDICATOR TUBE | | RAW1128 |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **OPSW UNIT** | | | |
| **SEMICONDUCTORS** | | | |
| | Q1409 | | DTA124TS |
| | Q1401-Q1408 | | DTC124ES |
| | D1409-D1411 | | 1SS254 |
| | D1407 | | SEL6410E |
| | D1401-D1403, D1405 | | SEL6910A |
| | D1406, D1408 | | SEL6C10R |
| **SWITCHES AND RELAYS** | | | |
| | S1401-S1413 | | RSG1030 |
| **CAPACITORS** | | | |
| | C1401 | | CEJA100M16 |
| **RESISTORS** | | | |
| | All Resistors | | RD1/6PM□□□J |
| **VR UNIT** | | | |
| **RESISTORS** | | | |
| | VR2102 | | RCV1102 |
| | VR2101 | | RCV1103 |
| **REC SWITCH UNIT** | | | |
| **SWITCHES** | | | |
| | S3 | | RSG-143 |
| **TAPE SELECTOR UNIT** | | | |
| **SWITCHES** | | | |
| | S1, S2 | | RSH-070 |
| **CONNECTOR UNIT** | | | |
| **CAPACITORS** | | | |
| | C1 | | CKCYF473Z50 |
| **RESISTORS** | | | |
| | ALL RESISTORS | | RD1/6PM□□□J |
| **SENSOR UNIT (A)** | | | |
| **SEMICONDUCTORS** | | | |
| | D1 | | GP1A51HR |
| **CAPACITORS** | | | |
| | C2 | | CKPUYY103N16 |
| **RESISTORS** | | | |
| | ALL RESISTORS | | RD1/6PM□□□J |
| **SENSOR UNIT (B)** | | | |
| **SEMICONDUCTORS** | | | |
| | D2 | | GP1A51HR |
| **CAPACITORS** | | | |
| | C3 | | CKPUYY103N16 |
| **RESISTORS** | | | |
| | ALL RESISTORS | | RD1/6PM□□□J |

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# Service Manual

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STEREO CASSETTE DECK

# CT-S830S
# CT-S830S-G

## CHAPTER 2

### CONTENTS


CHAPTER2
2.1 BLOCK DIAGRAM ····· 2-2
2.2 EXPLODED VIEWS AND PACKING ····· 2-3
2.3 SCHEMATIC DIAGRAMS ····· 2-9
2.4 PCB CONNECTION DIAGRAM ····· 2-15



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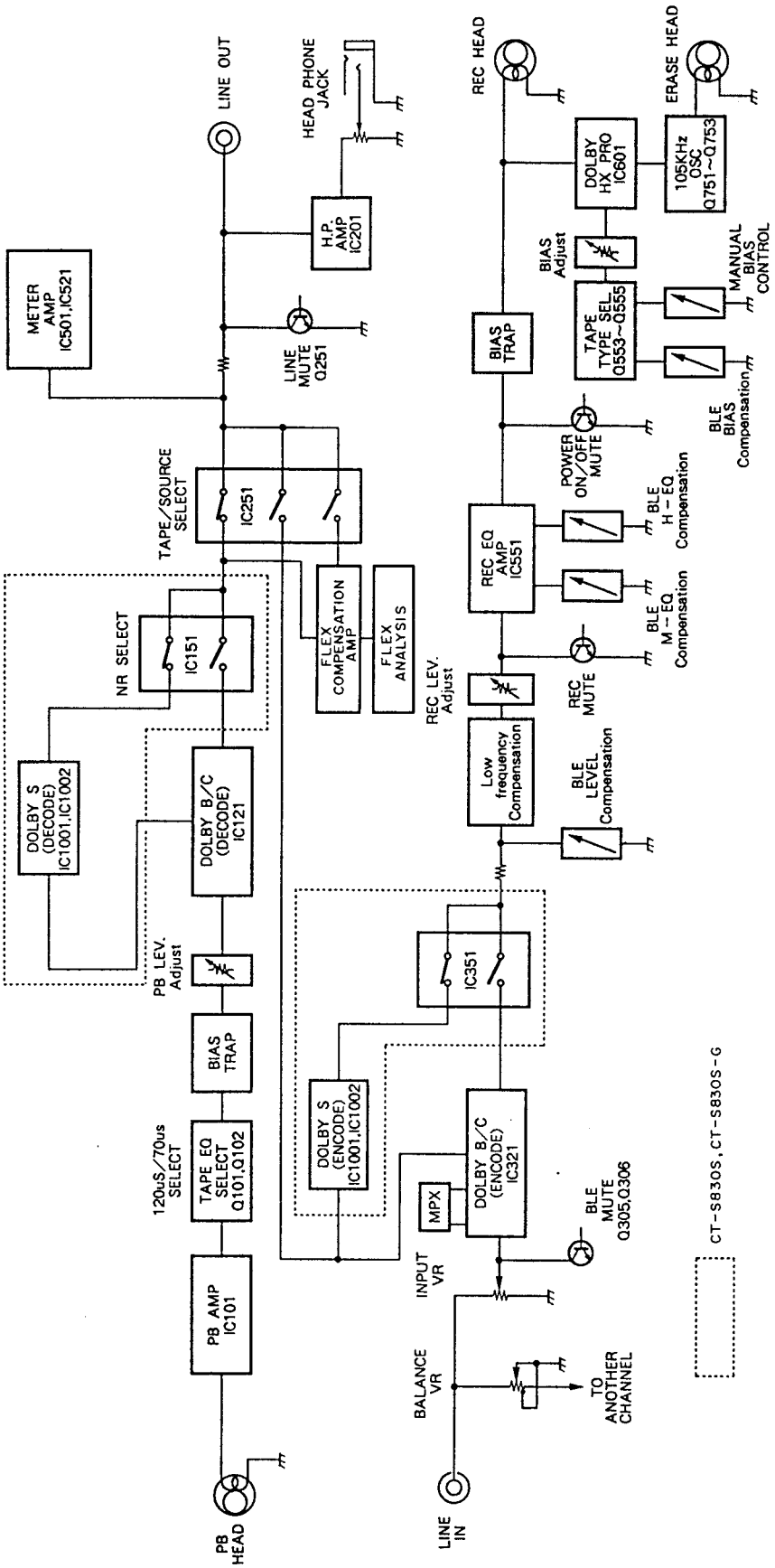
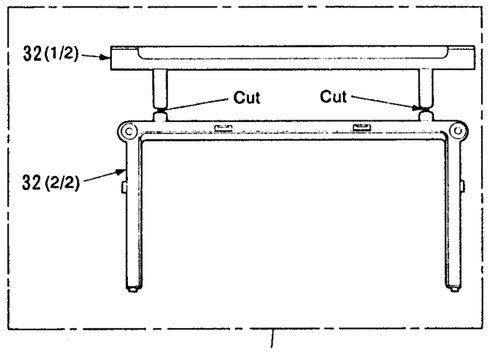
# 2.1 BLOCK DIAGRAM

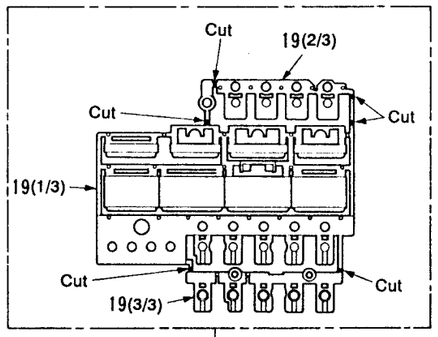


# 2.2 EXPLODED VIEWS AND PACKING

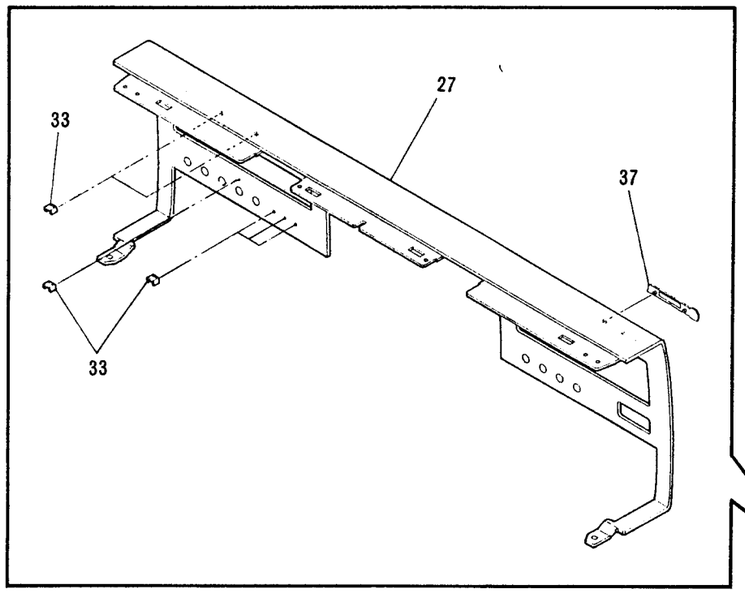
## 1. EXTERIOR

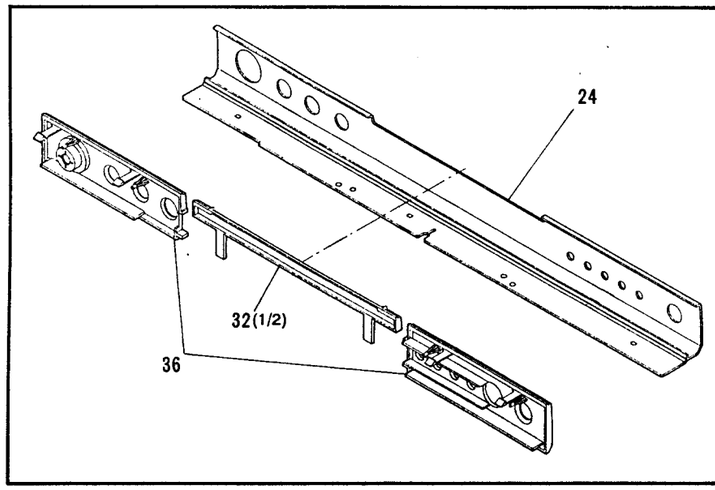


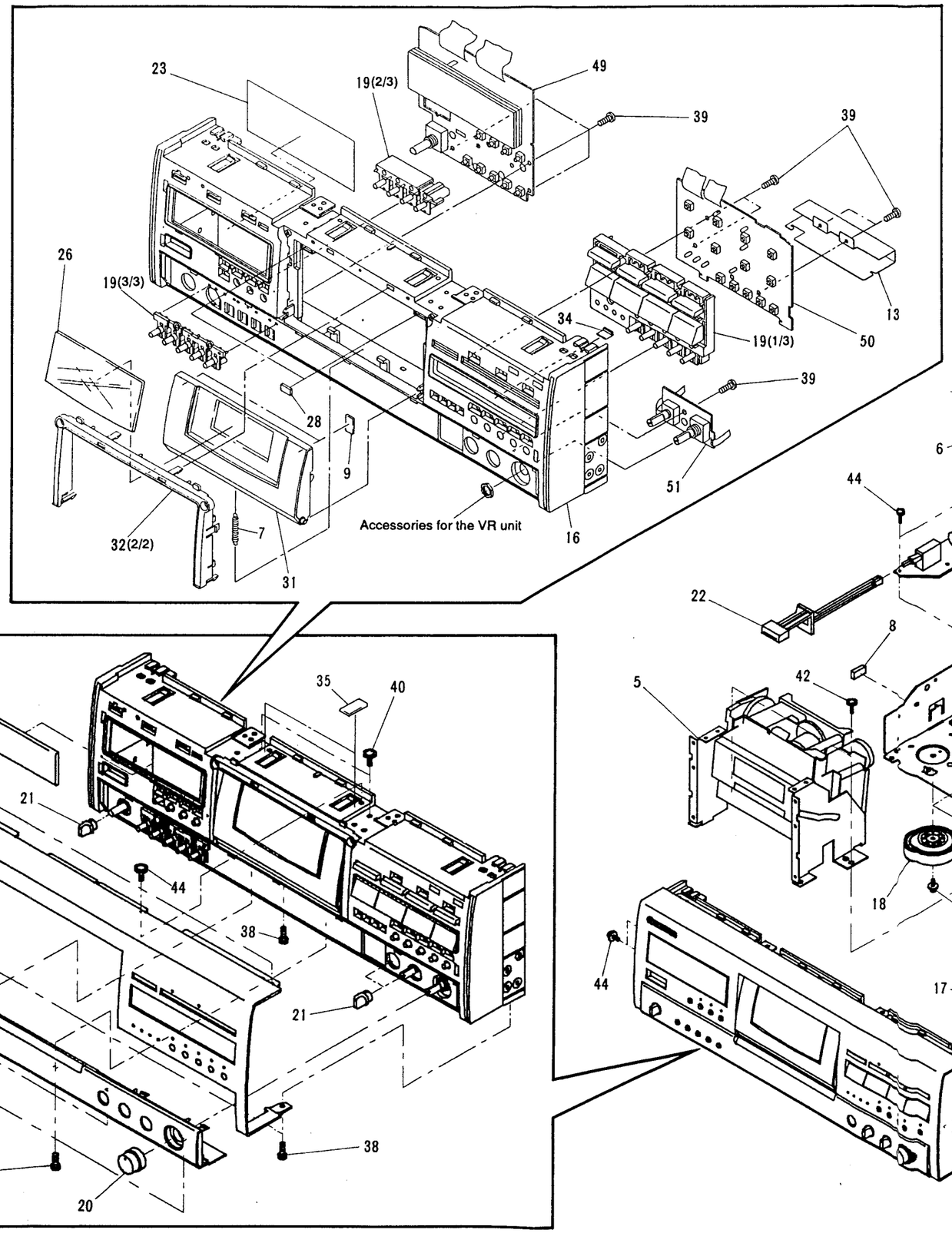

32

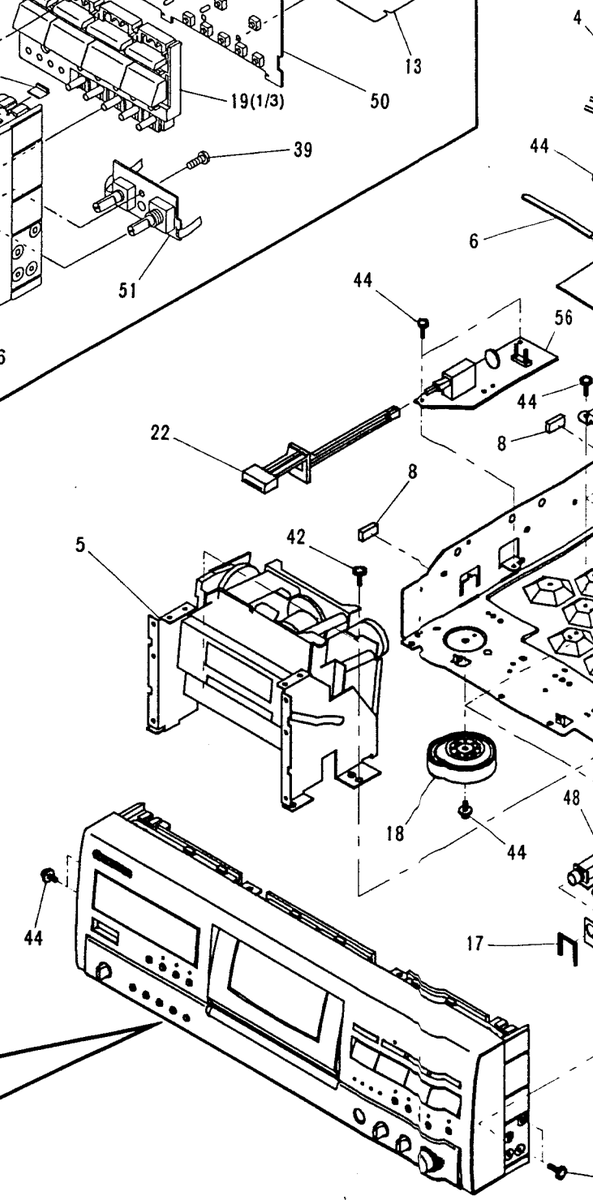


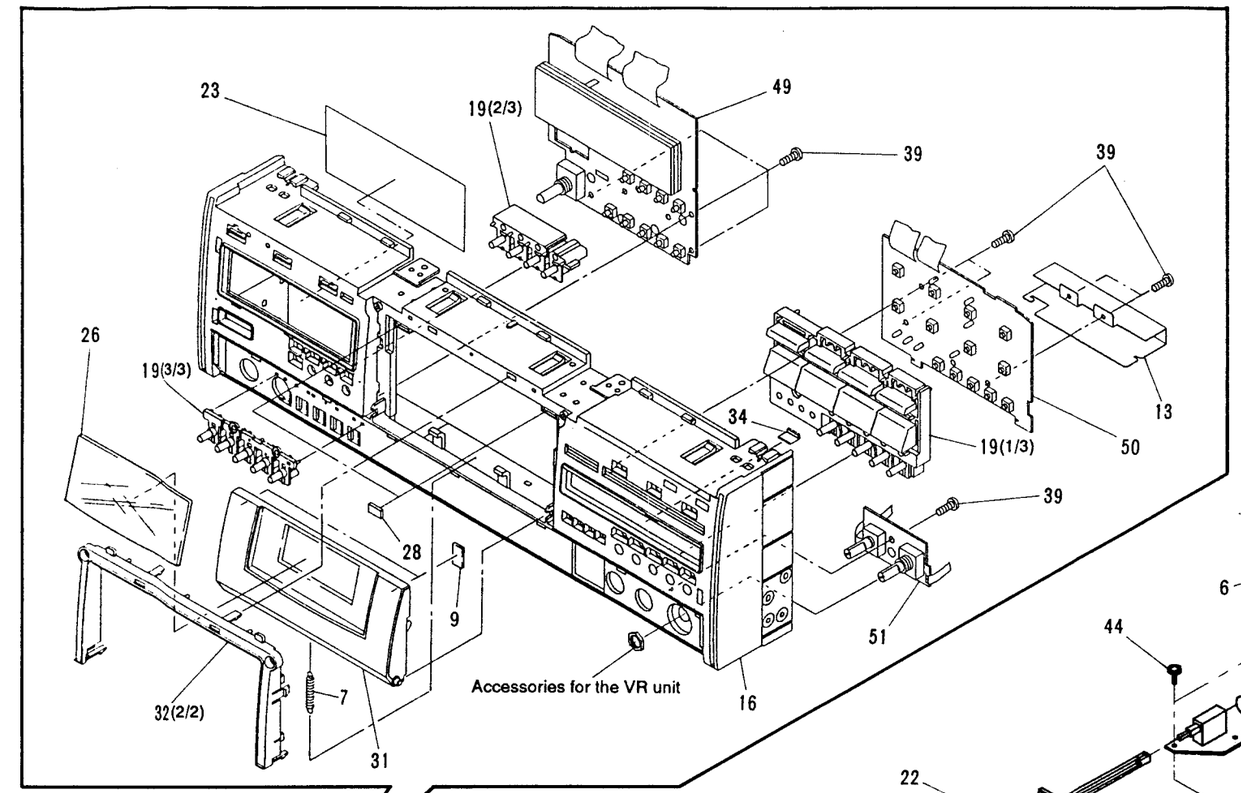

19




23
19(2/3)
49
39
39
26
19(3/3)
34
19(1/3)
50
13
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28
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51
Accessories for the VR unit
16
32(2/2)
7
31


35
40
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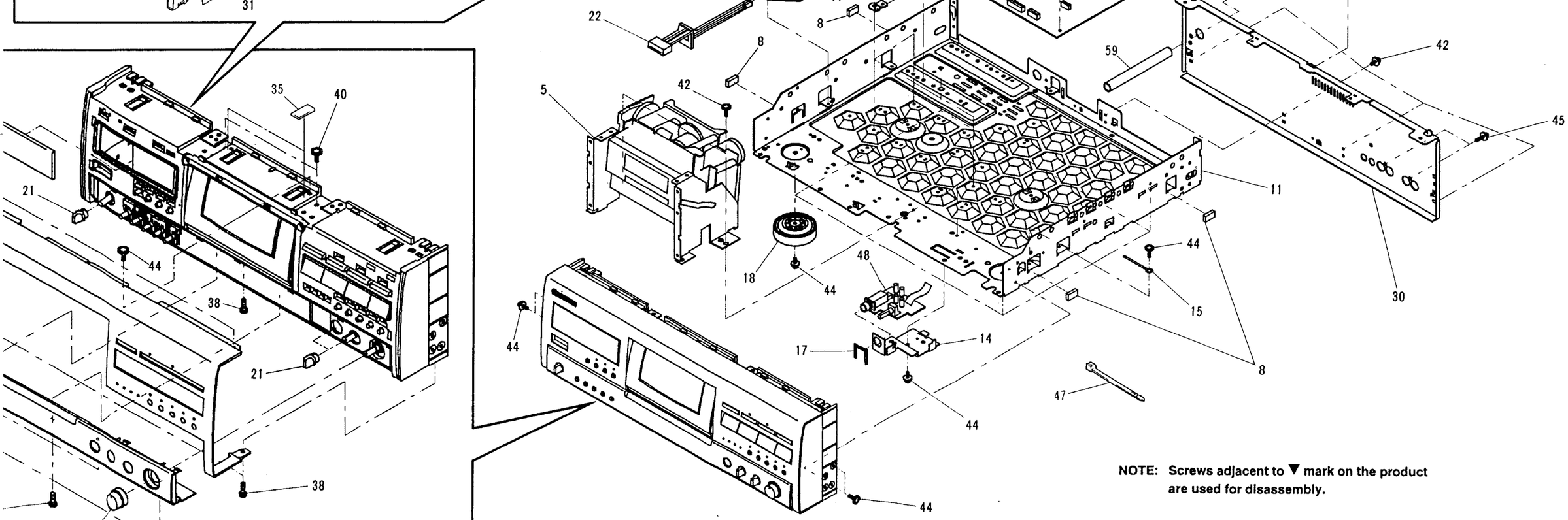
20


29
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55
56
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44
12
8
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42
42
5
45
11
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44
15
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17
14
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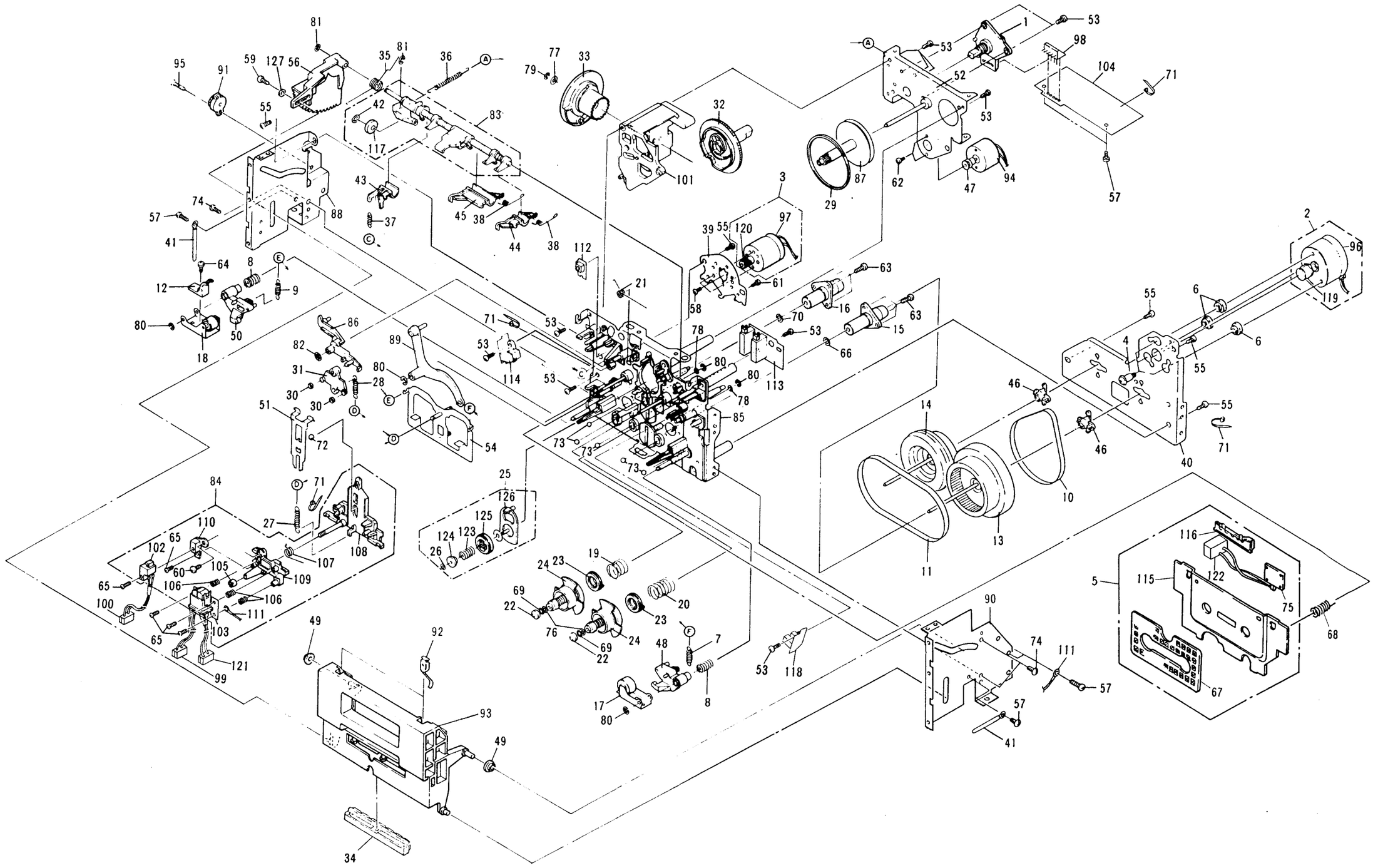
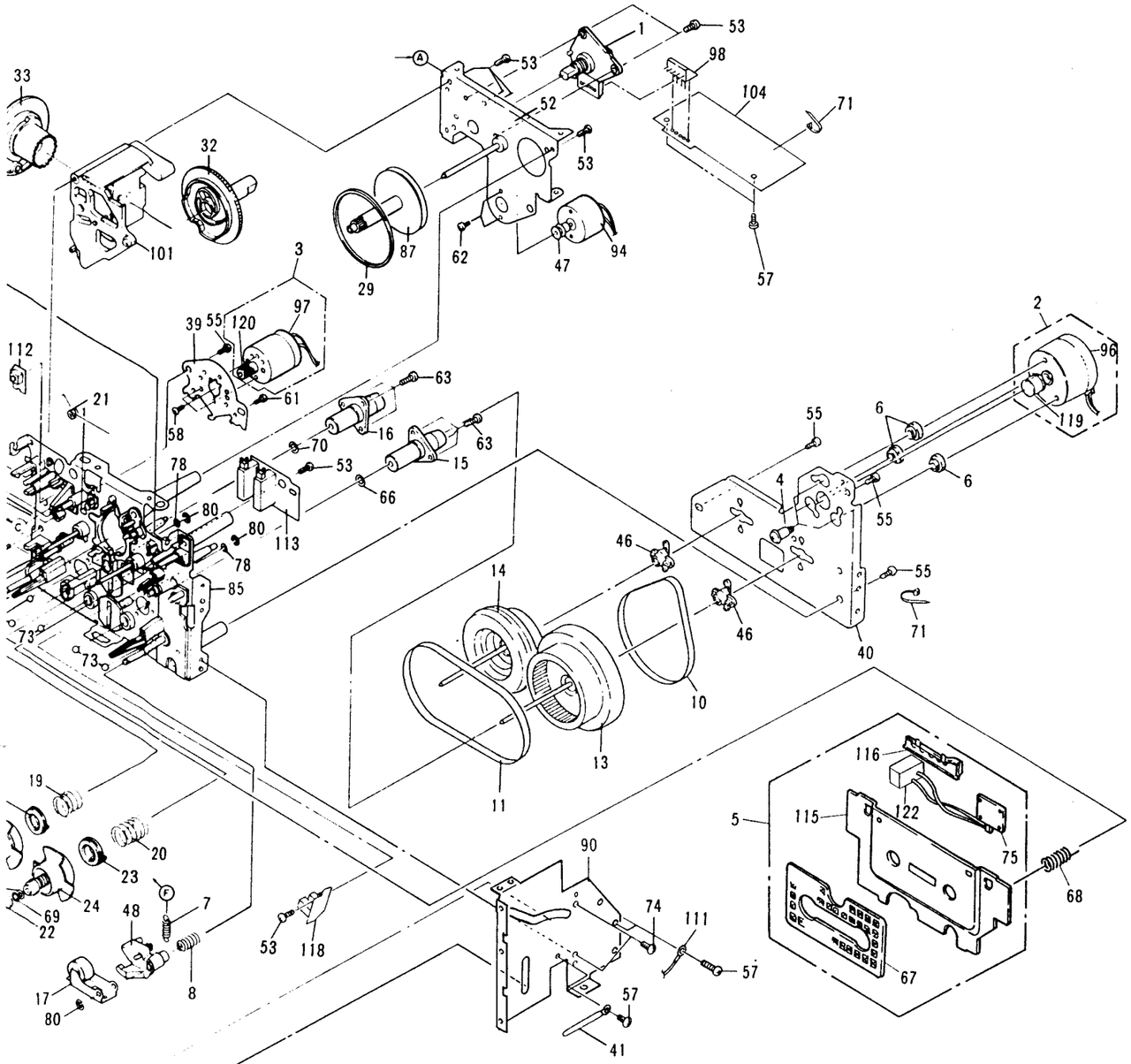
47
44
44
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

## 2. MECHANISM UNIT




33
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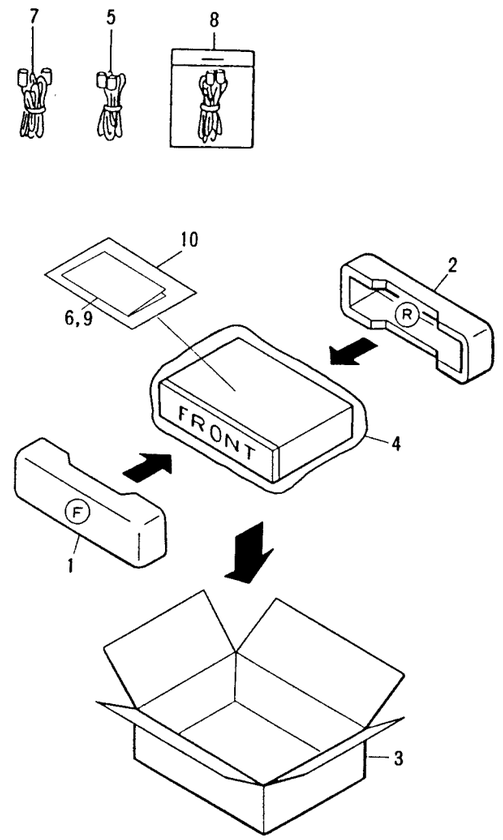
## 3. PACKING


7
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8
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6,9
2
R
FRONT
4
F
1
3

# 2.3 SCHEMATIC DIAGRAMS

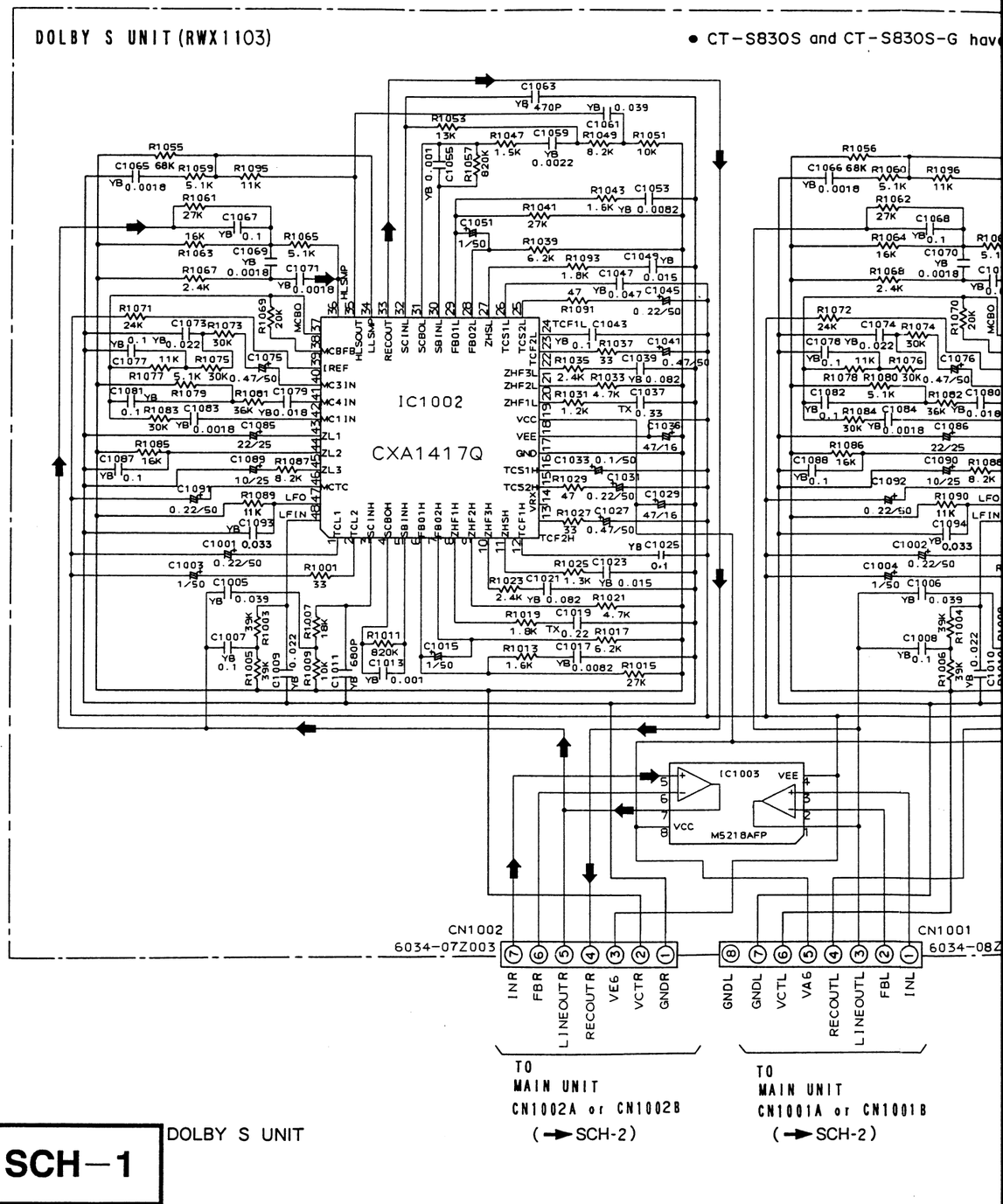
## NOTE FOR SCHEMATIC DIAGRAMS (Type 6A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or ← V :
   DC voltage (V) in STOP mode unless otherwise noted.
   ⇦ mA or ← mA :
   DC current in STOP mode unless otherwise noted.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH—□ ON THE SCHEMATIC DIAGRAM:**
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position):

OPSW UNIT
S1401 : ▶PLAY
S1402 : ▮▮PAUSE
S1403 : CD-SYNCHRO
S1404 : MPX FILTER
S1405 : ◀◀REW
S1406 : ●REC
S1407 : ○MUTE
S1408 : DOLBY NR OFF/B/C/S
S1409 : ■STOP
S1410 : OPEN/CLOSE
S1411 : ▶▶FF
S1412 : FLEX (1/F)
S1413 : MONITOR

FL UNIT
S1501 : TAPE RETURN
S1502 : BIAS +
S1503 : DISPLAY OFF
S1504 : METER HOLD
S1505 : COUNTER RESET
S1506 : BIAS –
S1507 : METER MODE
S1508 : COUNTER MODE
S1509 : AUTO BLE
S1511 : TIMER MODE (REC – OFF – PLAY)

## 1. DOLBY S UNIT

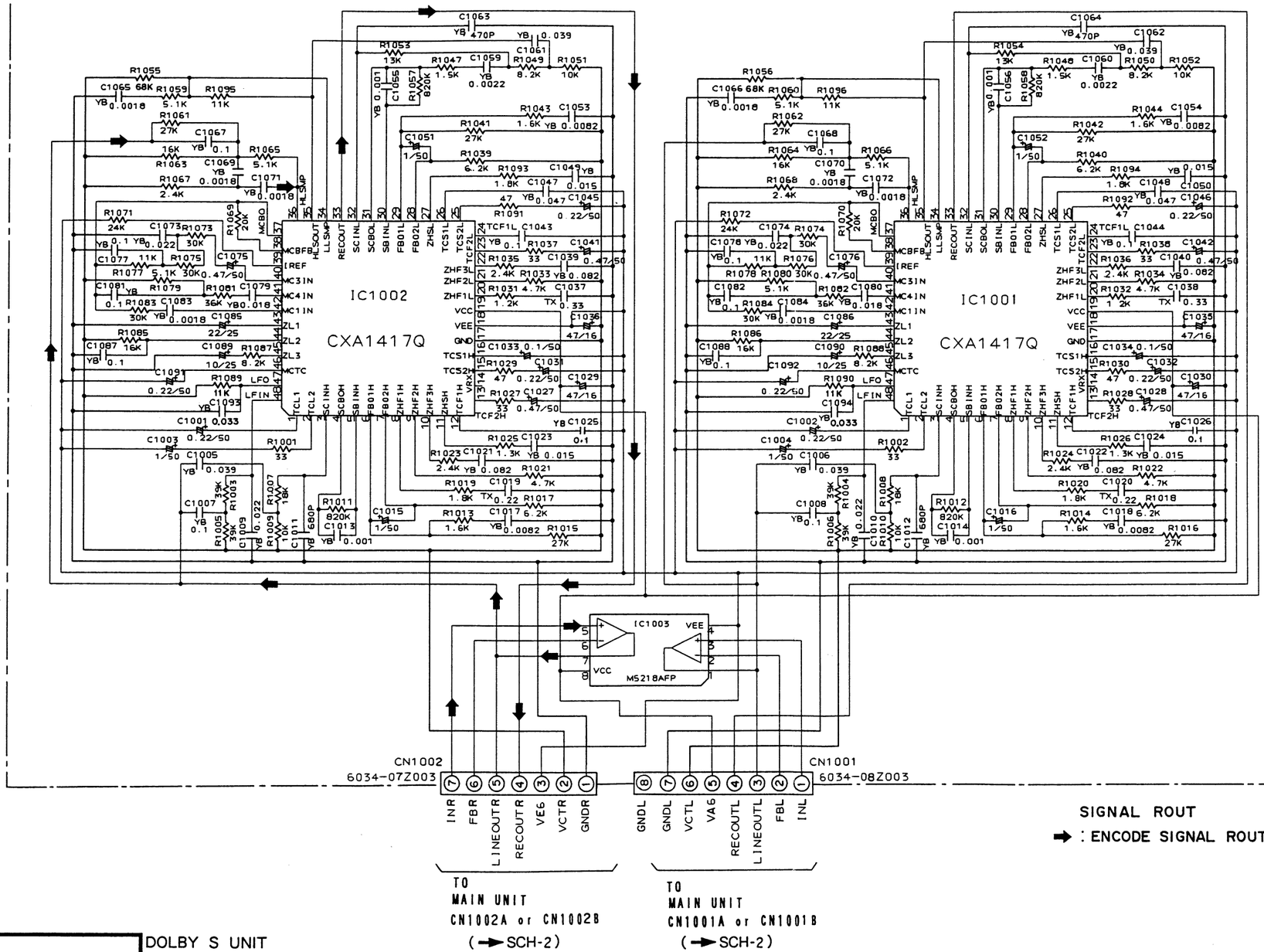



**SCH—1** DOLBY S UNIT

## 1. DOLBY S UNIT

DOLBY S UNIT (RWX1103)

• CT-S830S and CT-S830S-G have tow DOLBY S Unit.




IC1001, IC1002
(CXA1417Q)

| Pin No. | Voltage (V) | Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|---|---|
| 1 | -4.6 | 17 | 0 | 33 | 0 |
| 2 | -4.6 | 18 | -6.0 | 34 | 0 |
| 3 | 0 | 19 | 6.0 | 35 | 0 |
| 4 | 0 | 20 | 0 | 36 | 0 |
| 5 | 0 | 21 | 0 | 37 | 0 |
| 6 | 0 | 22 | 0 | 38 | 0 |
| 7 | 0 | 23 | -4.6 | 39 | -4.8 |
| 8 | 0 | 24 | -4.6 | 40 | 0 |
| 9 | 0 | 25 | -4.6 | 41 | 0 |
| 10 | 0 | 26 | -4.6 | 42 | 0 |
| 11 | 0 | 27 | 0 | 43 | 0 |
| 12 | -4.6 | 28 | 0 | 44 | 0 |
| 13 | -4.6 | 29 | 0 | 45 | 0 |
| 14 | -3.4 | 30 | 0 | 46 | -3.9 |
| 15 | -4.6 | 31 | 0 | 47 | 0 |
| 16 | -4.6 | 32 | 0 | 48 | 0 |

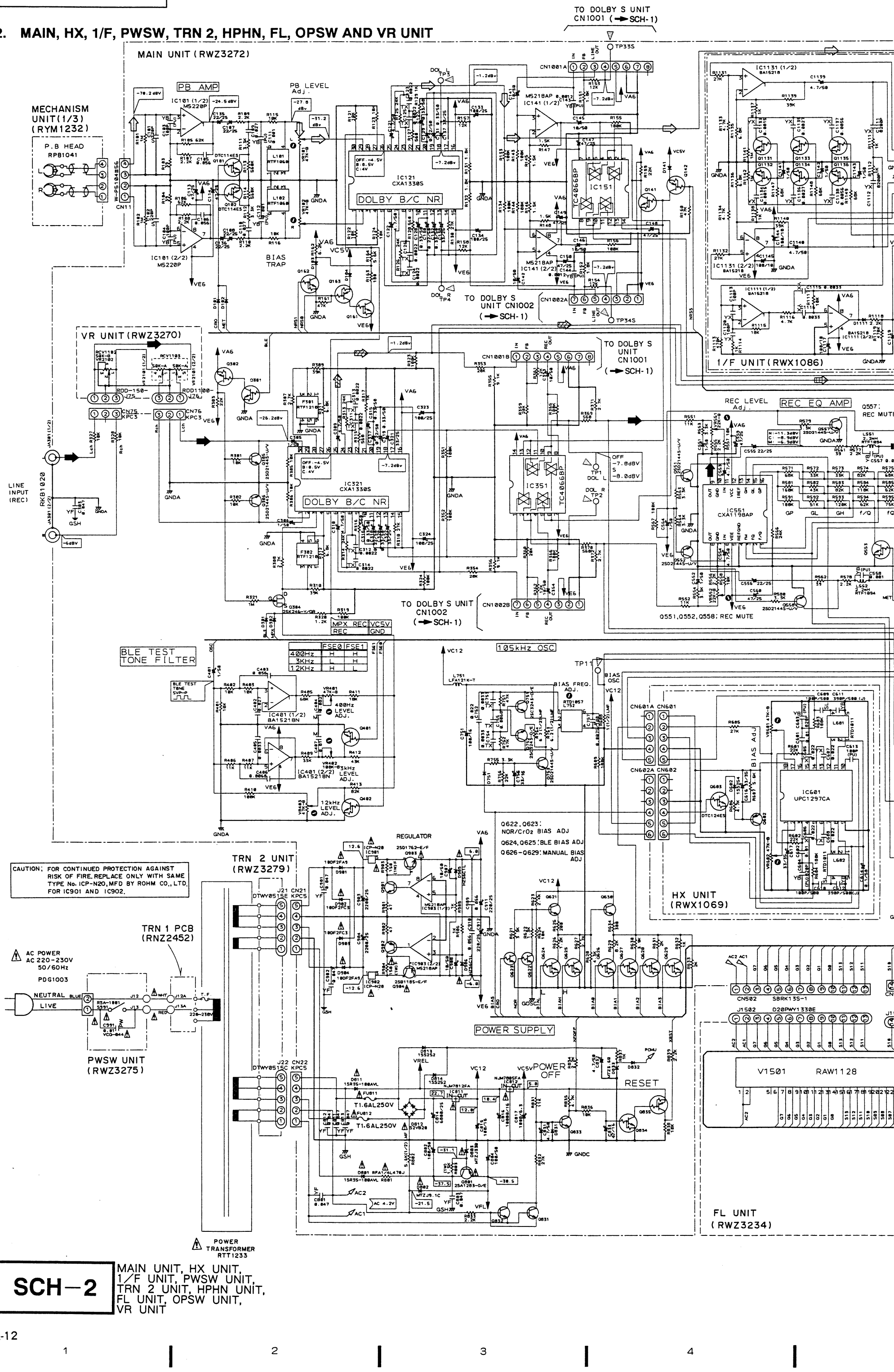
SIGNAL ROUT
➡ : ENCODE SIGNAL ROUTE

SCH-1

SCH-1 DOLBY S UNIT

DOLBY S UNIT SCH-1

## 2. MAIN, HX, 1/F, PWSW, TRN 2, HPHN, FL, OPSW AND VR UNIT




**SCH—2** MAIN UNIT, HX UNIT, 1/F UNIT, PWSW UNIT, TRN 2 UNIT, HPHN UNIT, FL UNIT, OPSW UNIT, VR UNIT

# N, FL, OPSW AND VR UNIT

TO DOLBY S UNIT CN1001 (→SCH-1)

PB LEVEL Adj.

BIAS TRAP

IC121 CXA1330S

DOLBY B/C NR

TO DOLBY S UNIT CN1002 (→SCH-1)

TO DOLBY S UNIT CN1001 (→SCH-1)

IC321 CXA1330S

DOLBY B/C NR

TO DOLBY S UNIT CN1002 (→SCH-1)

| MPX REC | VC5V |
|---|---|
| REC | GND |

| | FSE0 | FSE1 |
|---|---|---|
| 400Hz | H | H |
| 3KHz | L | H |
| 12KHz | H | L |

105kHz OSC

BIAS FREQ. ADJ.

400Hz LEVEL ADJ.

3kHz LEVEL ADJ.

12kHz LEVEL ADJ.

IC401 (1/2) BA15218N

IC401 (2/2) BA15218N

REGULATOR

2 UNIT (Z3279)

POWER SUPPLY

POWER OFF

RESET

1/F UNIT (RWX1086)

IC1131 (1/2) BA15218

IC1131 (2/2) BA15218

IC1111 (1/2) BA15218

IC1111 (2/2) BA15218

TC4066BP IC151

M5218AP IC141 (1/2)

M5218AP IC141 (2/2)

TC4066BP IC351

TAPE/SOURCE

| MODE | B | A |
|---|---|---|
| TAPE | H | H |
| SOURCE | H | L |
| 1/f | L | H |
| GND | L | L |

LINE OUTPUT(PLAY) RKB1020

JA251 (1/2) JA251 (2/2)

HPHN UNIT

IC521 (3/4) BA10339

IC521 (4/4) BA10339

REC LEVEL Adj.

REC EQ AMP

Q557: REC MUTE

Q551,Q552,Q558: REC MUTE

IC551 CXA1198AP

MECHANISM UNIT(2/3) (RYM1232)

RPB1041

TAPE SELECT

Q553 - Q555: REC EQ SELECTOR

IC702: SYSTEM CONTROL EXTENTION

IC702 LC7570

IC701 PD4444A

IC701: SYSTEM CONTROL

Q461 - Q468: BLE LEVEL ADJ

Q469 - Q472: BLE H-EQ ADJ

Q473 - Q476: BLE M-EQ ADJ

Q622,Q623: NOR/CrO2 BIAS ADJ

Q624,Q625: BLE BIAS ADJ

Q626 - Q629: MANUAL BIAS ADJ

HX UNIT (RWX1069)

IC601 UPC1297CA

FL UNIT (RWZ3234)

V1501 RAW1128

DISPLAY TAPE OFF RETURN

METER MODE

METER HOLD

COUNTER MODE

COUNTER RESET

FLAT

BIAS -

BIAS +

REC

PLAY

SIGNAL ROUTE
⇨ : PLAYBACK SIGNAL ROUTE
➡ : RECORDING SIGNAL ROUTE
⇨ : RECORDING MONITOR SIGNAL ROUTE

SCH-2

LINE OUTPUT(PLAY) RK81020 JA251 (1/2) JA251 (2/2)

HPHN UNIT(RWZ3232)

TAPE/SOURCE

MECHA CONTROL

REEL MOTOR DRIVE

ASSIST MOTOR DRIVE

METER AMP

SENSOR(A) UNIT (RWZ1752)

MECHANISM UNIT(3/3) (RYM1232)

SENSOR(B) UNIT (RWZ1753)

REC SW UNIT (RWZ1749)

ROTARY ENCODER RSX1004

MECHANISM UNIT(2/3) (RYM1232)

TAPE SELECT

Q553 - Q555: REC EQ SELECTOR

IC702: SYSTEM CONTROL EXTENTION

IC453: A/D CONVERTER for METER LEVEL

Q735 - Q737: KEY BUFFER

IC703 NM93C46N MEMORY IC

SR REMOCON RKN1004 JA951

CD SYNCHRO

TAPE SELECTOR UNIT (RWZ1750)

CONNECTOR UNIT (RWZ1751)

Q461 - Q468: BLE LEVEL ADJ

Q469 - Q472: BLE H-EQ ADJ

Q473 - Q476: BLE M-EQ ADJ

IC701 PD4444A

IC701: SYSTEM CONTROL

OPSW UNIT (RWZ3236)

NOTE:
Values of diodes. transistors and tact switches not shown are as follows.

2SC3311A-R/S
2SA1309A-R/S
DTC124ES
DTA124ES
DTC124TS
DTA124TS
1SS254
S1401-S1413 RSG1030-B
S1501-S1509 RSG1039-A

IC121, IC321 (CXA1330S)

| Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|
| 1 | 0 | 16 | 6.0 |
| 2 | 0 | 17 | 0 |
| 3 | 0 | 18 | 0 |
| 4 | 0 | 19 | -5.7 |
| 5 | -6.0 | 20 | -5.7 |
| 6 | 0 | 21 | 0 |
| 7 | 0 | 22 | 0 |
| 8 | 0 | 23 | 0 |
| 9 | 0 | 24 | 0 |
| 10 | 0 | 25 | 0 |
| 11 | -5.7 | 26 | 0 |
| 12 | -5.7 | 27 | 0 |
| 13 | 0 | 28 | 0 |
| 14 | -4.9 | 29 | 0 |
| 15 | -6.0 | 30 | 0 |

IC551 (CXA1198AP)

| Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|
| 1 | 1.3 | 9 | 0.7 |
| 2 | 1.3 | 10 | 0 |
| 3 | 1.3 | 11 | 0 |
| 4 | 0 | 12 | 6.0 |
| 5 | -6.0 | 13 | 1.2 |
| 6 | 0 | 14 | 1.3 |
| 7 | 0 | 15 | 1.3 |
| 8 | 0.7 | 16 | 1.3 |

IC601 (UPC1297CA)

| Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|
| 1 | 4.4 | 10 | 1.7 |
| 2 | 0 | 11 | 0 |
| 3 | 4.4 | 12 | 0 |
| 4 | 0.6 | 13 | 0 |
| 5 | 0 | 14 | 0 |
| 6 | 0 | 15 | 0.6 |
| 7 | 0 | 16 | 4.4 |
| 8 | 0 | 17 | 0 |
| 9 | 0 | 18 | 12.0 |

MAIN UNIT, HX UNIT, 1/F UNIT, PWSW UNIT, TRN 2 UNIT, HPHN UNIT, FL UNIT, OPSW UNIT, VR UNIT

SCH-2

# 2.4 PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name |
|---|---|---|
| Q504 E Q504 | Q504 Q504 | Transistor |
| D203 D203 | D203 | Diode |
| C513 C513 | C513 | Capacitor (Polarized) |

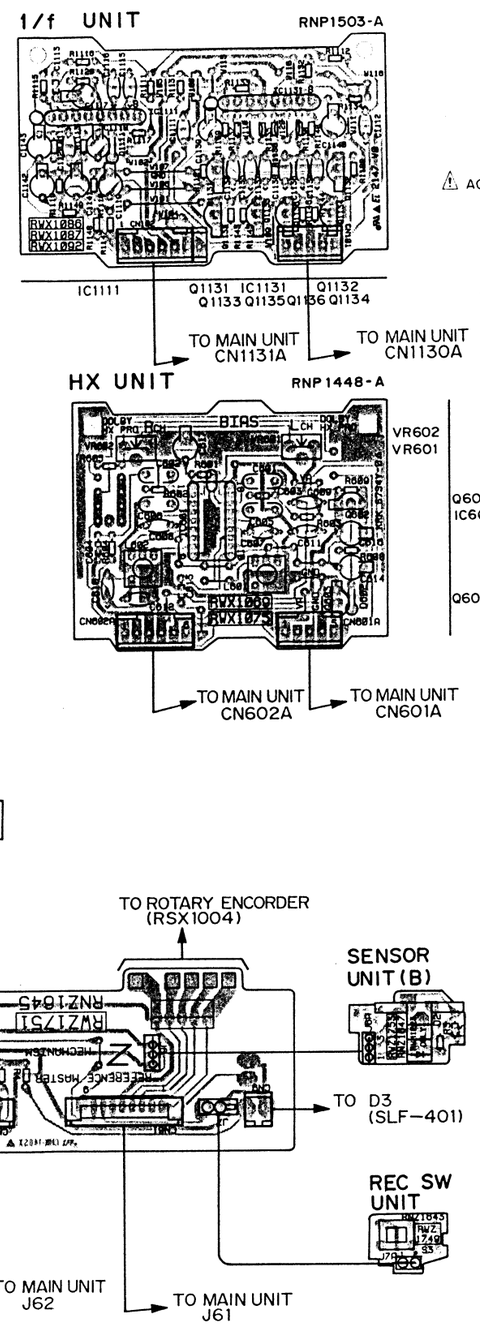
3. The transistor terminal marked with E or ⊏ shows the emitter.
4. The diode terminal marked with ◎ or ⊐ shows cathode side.
5. The capacitor terminal marked with ◎ or ⊏ shows negative terminal.

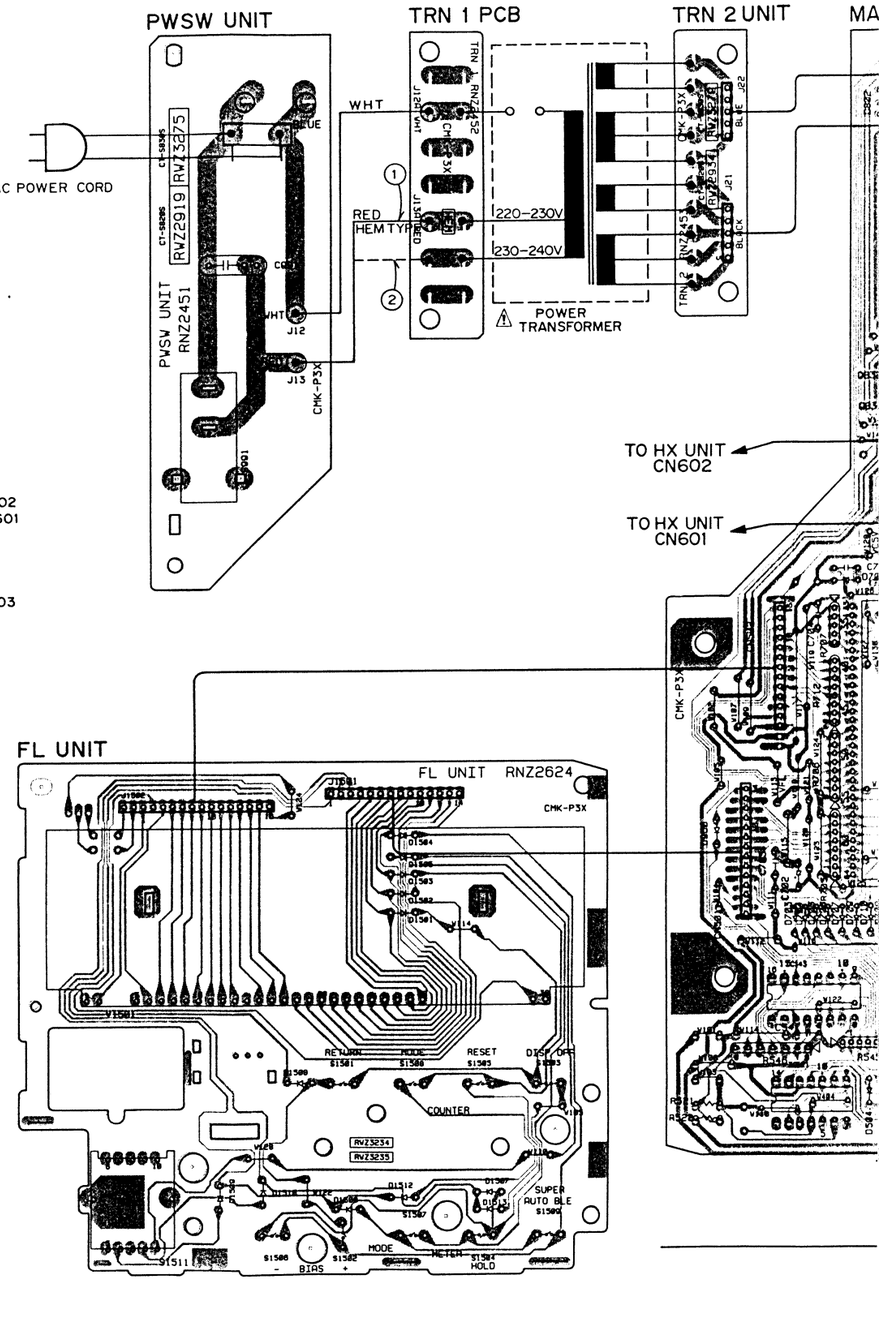
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name |
|---|---|---|
| B C E | B C E B C E | Transistor |
| B C E | B C E B C E | Transistor with resistor |
| D G S | D G S D G S | Field effect transistor |
| | | Resistor array |
| | | 3- terminal regulator |

- **This diagram is viewed from the mounted parts side.**




Line Voltage Selection

Line voltage can be changed by the following modification :

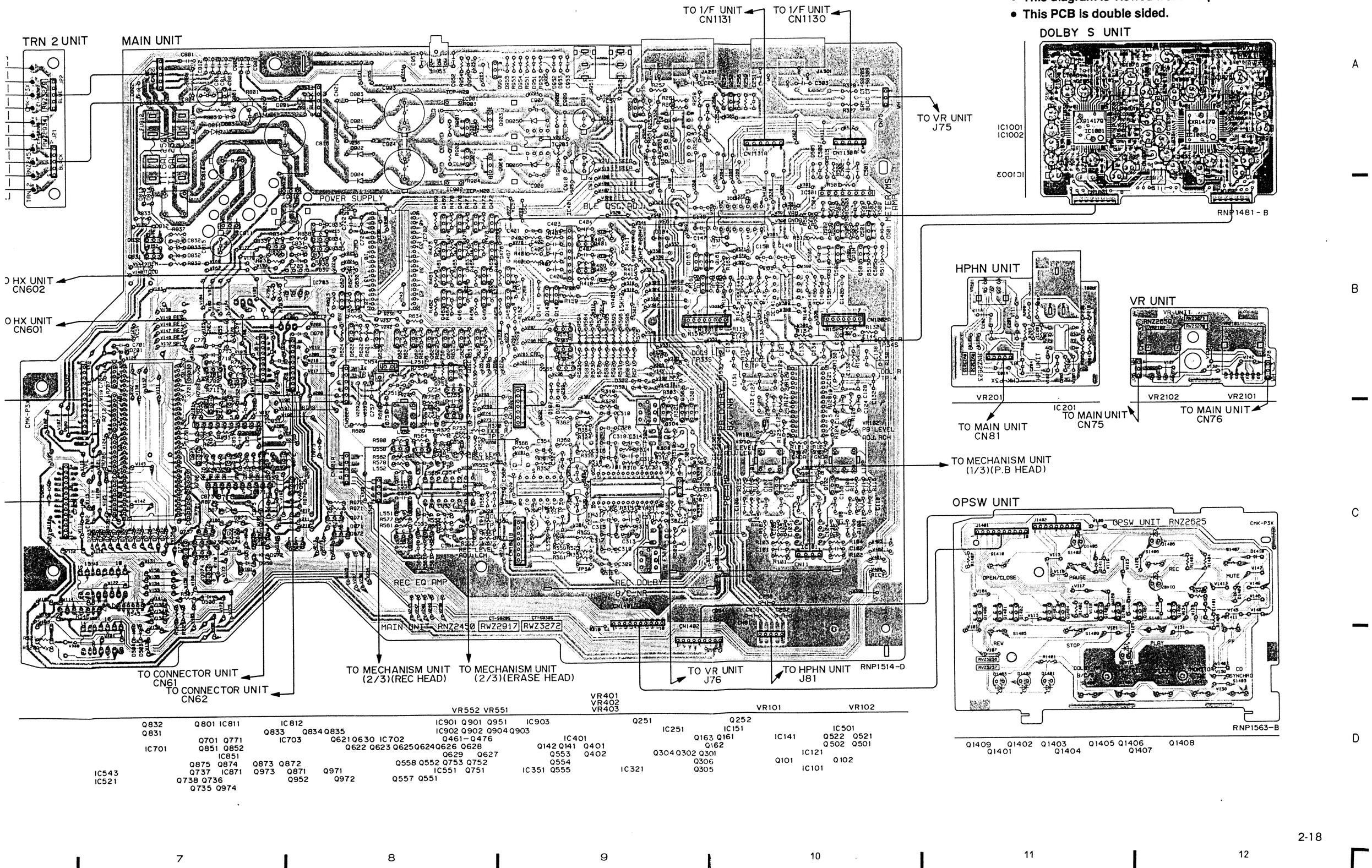
1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection of TRN 1 PCB primary pins.

| Voltagev | Terminal No. of TRN 1 PCB |
|---|---|
| 220V – 230V | ① |
| 230V – 240V | ② |

4. Stick the line voltage label on the rear panel.

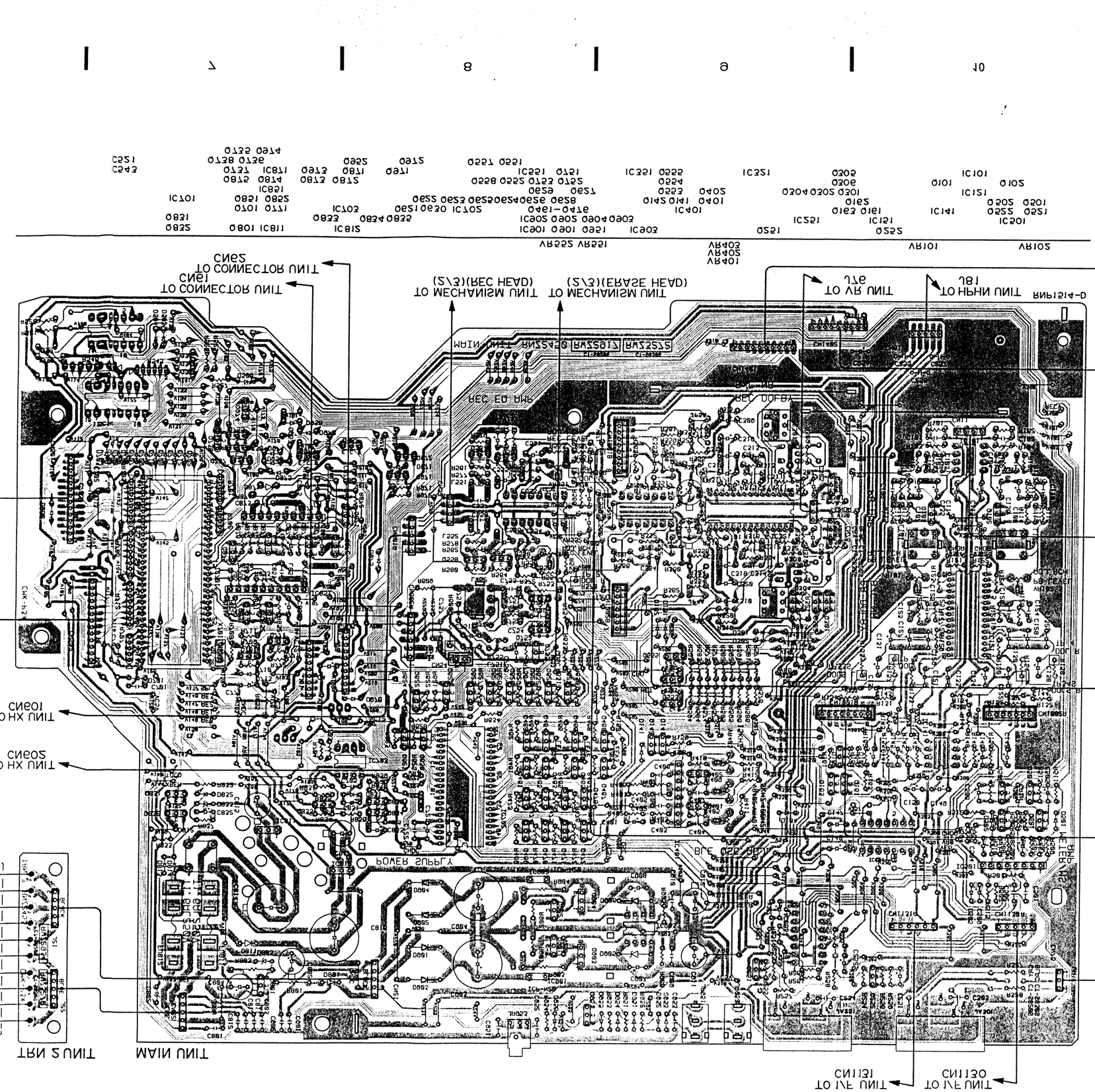
| Parts No. | Description |
|---|---|
| AAX – 193 | 220V label |
| AAX – 192 | 240V label |

- This diagram is viewed from the pink colored foil side.
- This PCB is double sided.

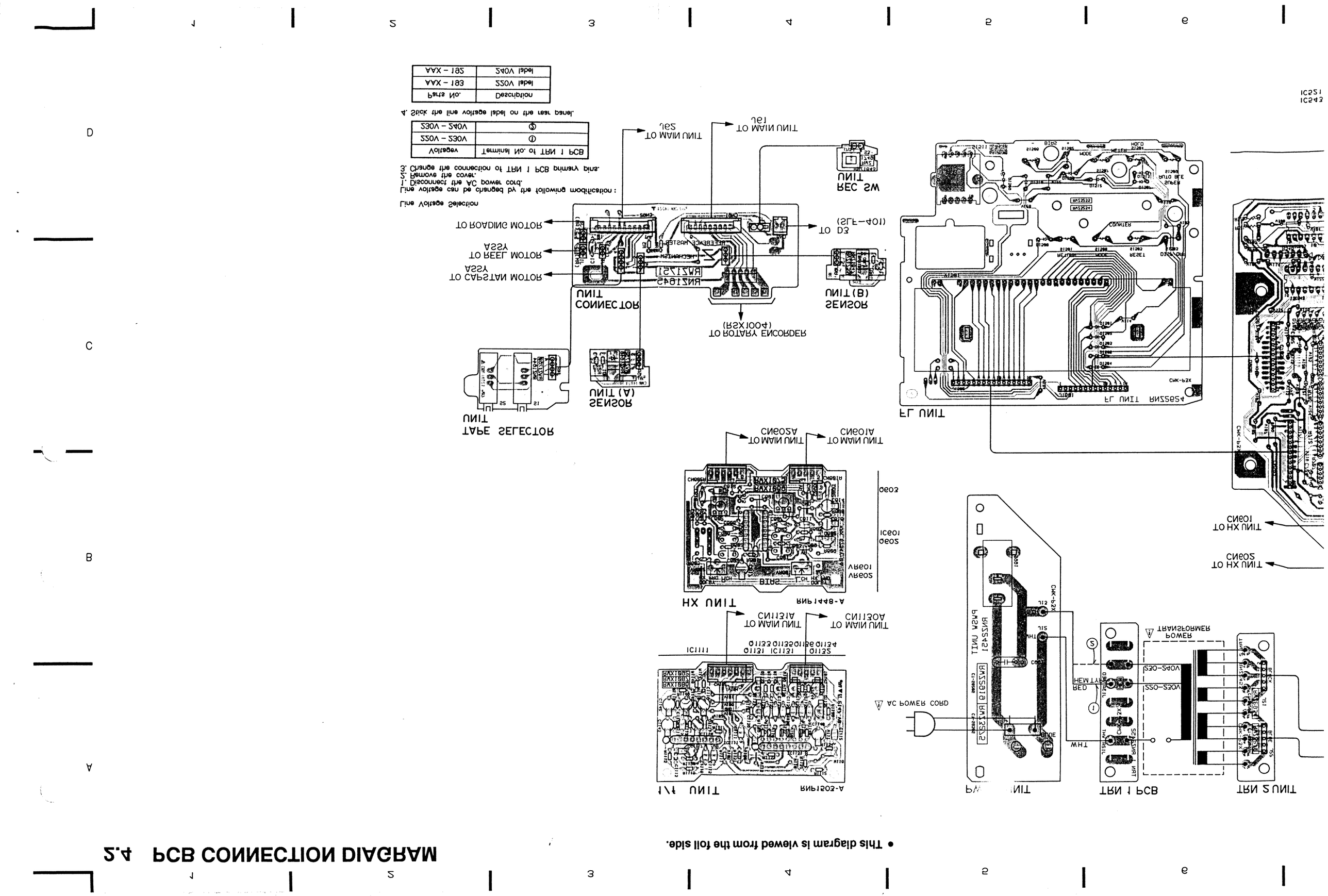


# CT-2830S, CT-2830S-C

- This diagram is viewed from the gray colored foil side.
- This PCB is double sided.



# 4.5 PCB CONNECTION DIAGRAM




A. Stick the line voltage label on the rear panel.

| Parts No. | Description |
|---|---|
| AAX – 1853 | S60V label |
| AAX – 1851 | S50V label |

| Voltage | Terminal No. to TRI F PCB |
|---|---|
| S60V – S40V | ③ |
| S50V – S30V | ① |
| S40V – V05S | ⑤ |

3. Change the connection of TRI F PCB primary pins.
5. Remove the cover.
1. Disconnect the AC power cord.

Line voltage can be changed by the following modification :

Line Voltage Selection

| | |
|---|---|
| D | |
| C | |
| B | |
| A | |